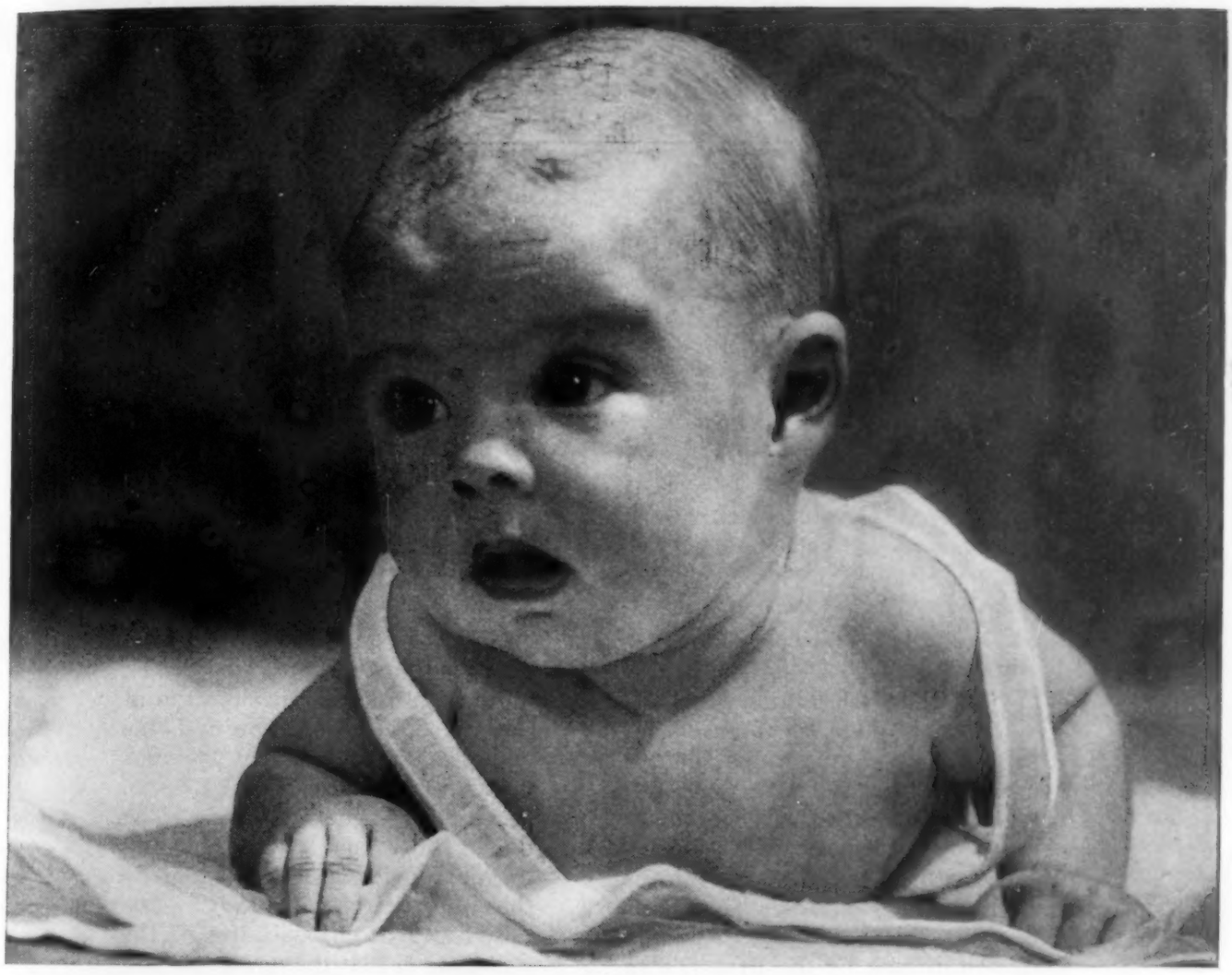

Life is not all Milk and Rattles

Life is not as gentle to a tiny baby as it seems to be.

He comes into this world, never having breathed, never having eaten, never having digested food. Almost immediately, his little body must adjust itself to these vital functions.

If he is like most babies, he doubles his weight in the first few months; *triples* it in the first year. Every part of his body must make adjustments to accommodate this proportionately tremendous growth.

A new baby encounters disease-producing germs for the first time, and must build up resistance against them. If he does become ill, he is without the power to tell what the trouble is or where it lies. And when upset, he frequently is further endangered by the well-meant, but often harmful, suggestions of relatives and friends who "know *just* what to do."

Yes, infancy is so hazardous a period that, last year, the number of deaths among babies under one year of age was more than *three times* the number of deaths from automobile accidents.

The doctor is the one person equipped to give parents competent guidance through this dangerous period of a baby's life.

The doctor who sees the baby regularly can often detect sickness or physical trouble *in its early stages*. He can prescribe correct diet, proper hours of sleep, healthful and sensible handling of the habit problem. And he can start an important immunization program, to prevent such diseases as smallpox, diphtheria, and whooping cough.

Enlisting the doctor's help—entrusting growth, diet, and general health to his supervision—is one of the most sensible precautions parents can take in those dangerous days of the child's first year.

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SEPTEMBER 1936

Health Examinations Before Marriage

THROUGHOUT the world attention is being focused on health examinations before marriage as a means of controlling the spread of venereal or sex diseases, as a means of detecting the beginnings of chronic or degenerative diseases in their early stages and as a means of determination of the presence in either the bride or bride-groom of some physical or mental disturbance that may interfere with a happy and successful marriage.

IT IS taken for granted that a suitable marriage is one in which the persons concerned may be compatible in both their mental and physical relationships and in which they may have children if they so desire.

THE Eugenic Society of Great Britain has outlined the steps to be followed in a suitable premarital examination made by the family physician. Such an examination includes the occupation of the person to be examined, his age, his record as to previous marriage and whether or not there have been children. The doctor finds out whether or not the person is related by blood to the one he is to marry. The possibility of intensifying in the children either the good or bad characteristics by marriage of relatives is an important consideration.

FOR years there has been a superstition that cousins, particularly first cousins, should not marry. Modern eugenics does not condemn such marriages provided there are no harmful characteristics or conditions likely to be transmitted in intensified form by the marriage. In order to determine the presence of inheritable conditions, the doctor investigates the condition of health of all the ancestors on both sides as far back as grandparents and

EDITORIAL

great-grandparents. Thus he may learn the causes of death of all those in the ancestry and whether or not they suffered from conditions likely to run in the family. The doctor also endeavors to find out whether or not any of the known relatives suffer with cases of nervousness, nervous breakdowns, mental disturbances or defects, insanity, fainting spells, convulsions or fits, cases of drug addiction or incidences of suicides.

THE doctor will inquire particularly concerning such diseases as tuberculosis, diabetes, asthma and such failure of the special senses as blindness or deafness early in life. The presence of nervous troubles including fits of crying, periods of depression and the occurrence of morbid fears, such as the fear of traffic, of open or closed spaces, of thunder storms, of animals or diseases, may be of the greatest importance in preventing a happy married life.

THE doctor inquires finally as to the knowledge of the persons concerned relating to physical relationships between the sexes. When there is insufficient understanding of these relationships, suitable explanations by the physician may do much to insure against mental or physical traumas which are likely to be of importance in later life.

FOLLOWING these preliminary steps the doctors will make a complete physical examination internally and externally to determine the presence of abnormalities, tumors, infectious diseases and similar disturbances.

AS EVIDENCE of the extent to which this problem is beginning to concern investigators in this country, attention is called to a conference recently held in North Carolina under the leadership of the psychologist, Groves. In this conference psychologists, biologists, sociologists and teachers took part. The various aspects of the subject were thoroughly considered, and it was generally agreed that important facts concerning the relationships, physical and mental, which are developed in marriage might well constitute a part of the college curriculum in every modern school.

Youth Needs

MODERN young people are generally conceived of as a race of self sufficient and impertinent egotists. But I work with them, and I know they are not. Quite the contrary. Most of them are insecure and afraid—afraid of life, afraid of themselves. They stand on a threshold, leaving the security and protection of childhood behind them, facing an unknown and demanding future. Waiting and anxious to meet adulthood, eager to try their wings, they are yet afraid. Their bluffing and swaggering are attempts to keep up their own courage.

Most of us can recall this period in our lives when we were driven to keeping up a front before the world, and many of us will remember how we exaggerated the appearance of courage, more to reassure ourselves than to convince any one else.

But even an appeal to the memory of our own youth does not give us a sufficiently sympathetic picture of how youth feels today. In our day most of us in facing adulthood were reasonably sure that hard work and honesty would win spurs for us. There were plenty of jobs for all of us who needed them, and a climb up the ladder was assured for those of us who had good ability and a desire to climb. But things are different today. For five years, only the cream of unusual ability and initiative among our high school and college graduates have been able to get or keep jobs. For five years the youngsters in high school or college have seen members of graduating classes wander aimlessly in a world which seems to have no place for them.

I have watched these graduating young people closely. A few of them have struggled

to Believe in Itself

By LEE VINCENT

MODERN YOUNG PEOPLE STAND ON A THRESHOLD, LEAVING THE SECURITY AND PROTECTION OF CHILDHOOD BEHIND THEM, FACING AN UNKNOWN AND DEMANDING FUTURE.

valiantly, taking any kind of job for any length of time, showing remarkable initiative in seeking or even inventing jobs. They have used their spare time for studying, some of them in business or vocational schools, some in graduate colleges. They have refused to waste time; they have buried all ideas of false pride, taking any kind of work for any kind of pay. Two college graduate boys of my acquaintance collected garbage for over a year at 25 cents an hour; numberless college graduate girls have done housework over a period of from one to three years for maintenance only. These young people have had courage, determination and, most valuable of all, a refusal to accept defeat. I am deeply gratified to note that with a gradual reopening of vocational and professional opportunities these stick-with-it youngsters are the ones who are getting desirable jobs. On the other hand the average young person during this period was usually compelled to give up the struggle and go home to live on a family which as a rule could ill afford to keep him. The depression has proved an acid test. Only the most superior ability has managed to survive it vocationally.

The young people of high school and college age have watched this process of elimination. They feel that only the truly unusual person has a chance in this acutely competitive world. And most of them know that they are not unusual.

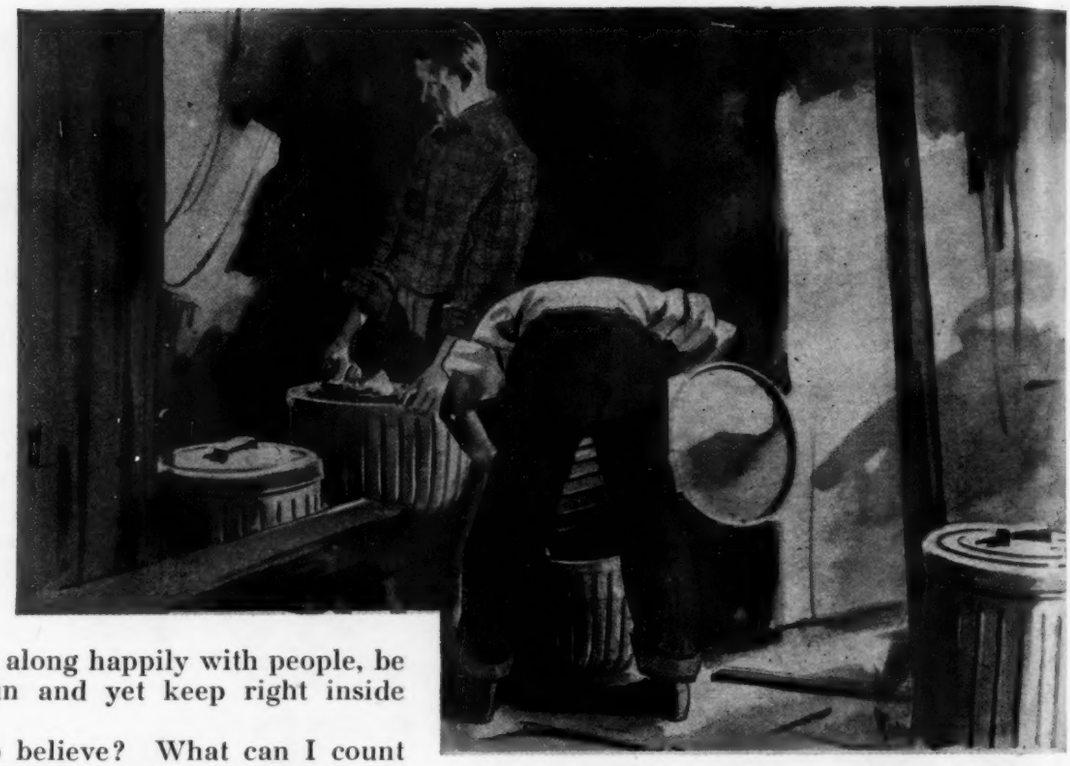
"In a world crowded with unemployment what place is there for average people," they argue, "especially for inexperienced, young, average people?"

THESE youngsters stir one's sympathy. It is almost impossible to keep up their courage, yet absolutely necessary to do so. They are permanently defeated if they give up hope; they are never defeated as long as they have hope, even a spark of it. As a consultant of young people I have felt during the past five years that my chief job with them was one of inspiration. Of every hundred adolescent youngsters I have seen during this period there have invariably been from eighty to ninety of them needing to be convinced that they have what it takes to meet life—not brilliantly, as a rule, but at least satisfactorily. Unlike the youth of our adult generation these young people have no notions of setting the world on fire. All they wish to be assured of is that they will not fail too badly. This change from dreams of brilliant success to a desperate hope that failure can somehow be avoided is perhaps the most conspicuous difference between the youth of our recent past and the youth of our immediate present.

Nevertheless, with this basic difference in attitude our current young people are facing the same old problems of life. They must leave the familiar round of home and school; they must somehow earn a living; they must face the demands of marriage and parenthood; they must find adequate social and recreational outlets; they must find spiritual security and a satisfactory philosophy of life. In a welter of shifting standards and uncertainty they must steer a safe course, and they must somehow discover what is Right, at least what is right for them.

And they are asking eager questions:

"What line of work fits my ability and at the same time promises a living?"



TWO COLLEGE BOYS COLLECTED GARBAGE FOR OVER A YEAR SO THEY MIGHT BE ATTENDING SCHOOL WHILE THEY EARNED MONEY FOR EXPENSES.

"How can I get along happily with people, be popular, have fun and yet keep right inside myself?"

"What am I to believe? What can I count on? How can I build my life so that I won't find it caved in at 40?"

The last question, phrased so inelegantly, expresses their desire to find security. They have seen many lives built blithely toward one goal and suddenly crashed by a single series of economic happenings. They are sensing the need for another kind of building.

THE girls are asking, "How can I marry and work? Will my marriage succeed if I do work?" Many of them face the alternative of working while married or of postponing marriage indefinitely. And, contrary to the general belief, I find young people seriously anxious to make their marriages permanent and beautiful.

In no sense do I find the young people I work with taking life lightly. They are young, to be sure, and want the joyous good time of youth; but they are serious, too, desperately in earnest about making good, about meeting the obligations of life honorably. They seem to have developed a precocious insight into the meaning of happiness. Perhaps it is because they have seen the limits of a happiness based only on accumulation of material wealth which can so easily be destroyed. Perhaps we parents and educators have done a better job of character development than we realized. At any rate, our current young people seem to know that happiness—real happiness—is something intangible, something deep-rooted and permanent, something that is to be found only through inner growth and the achievement of a sound point of view.

And so they come to us for help; that is, they come if they discover that they can get anything but a scolding or outdated moralizing.

An occasional youngster, to be sure, needs to be reminded that he lives in a world with other people, that selfishness, bad temper and laziness will win him no comfort from life. Most of them need to see their weaknesses clearly, impersonally and without sullen defensiveness. But whether they are sublimely unconscious of any blemish and therefore are in need of an awakening of their sense of obligation, as about ten to twenty of every hundred are, or whether they belong to the eighty or ninety who see their weaknesses already too clearly and in a discouraging light; they seldom need to be scolded. Much more often they need to be reassured, to be encouraged to take up the responsibility of growing up, to be inspired to take hold of life and to meet it courageously.

But they need something more than inspiration. They need concrete help in understandable terms. "What *is* Right? What *can* we count on?" They urge us to specific answers.

UNFORTUNATELY we adults are usually about as bewildered in our attempts to help them as they themselves are in asking for help. Nevertheless, most of us have found a few things that seem to survive as real and lasting assets. We know, for example, that in any economic or social system, in any vocation or profession, in any routine or in any emergency of life these young people will need health and an ability to get along with people; that they will need on the one hand self control and on the other hand self expression through a variety of intellectual, esthetic and play outlets; that they must understand and value love of friends, love of family and love of humanity; and that above all, they

must have a sense of proportion about themselves and their abilities, and a sound spiritual philosophy. In light of these facts there are some things we can say to them with a reasonable conviction that we can be of help:

"YES, there are things you can do if you wish to build your life on a secure foundation. First, get and keep well. Whatever happens you will need health to see you through. When you are young you are likely to think that your physical energy will never run out, and so you do not take care of it. But no body was built to be abused, and the average person needs to remember quite early in his life that energy burned up must be restored if disaster is to be avoided. Marie Dressler tells in her book that she found physical vigor infinitely more important than slender hips in making her way in the world. So if you are reducing your weight, be careful that you do not at the same time damage your vitality and lay yourself open to illness. If you are a night owl, start getting at least eight hours of sleep every night. Enough vigorous physical exercise daily to insure deep breathing and solid muscles is also essential.

"This means more than health to your vocational and social future. It means your looks as well. Solid muscles and good general health are at the root of good posture and sound physical vitality, and these in turn are the basis for attractive appearance and force of personality. Drooping shoulders, sallow complexion, dull eyes or a fish hand shake never won a job or friends for any one.

"But the impression you make on other people is more than vitality and force. It is voice, for one thing. Attention to this and a little practice can achieve a quiet, well modulated voice and distinct, easily understood diction.

"The other, perhaps most important, feature that makes for attractiveness is character. One famous beauty expert has said, 'All your features were given to you excepting your eyes and mouth. You make these for yourself.' It is your eyes and mouth and the general line of your figure and carriage that proclaim to the world who and what you are. Strength, self discipline, honesty, sympathy and joy will make you beautiful. Low vitality, self indulgence, cynicism and selfishness will narrow your eyes, harden your lips and bend your figure into ugliness.

"YOU stand at a threshold now where you must decide what you will look like for the rest of your life. Good health, immaculate cleanliness, simple and appropriate dress are the physical bases of appearance. Add to these, courage to pick up your chin, a zest for life to brighten your eyes and a friendly smile to soften your lips. The recipe is infallible. You will be attractive in spite of yourself."

We may, if what we have already said does not seem too much to absorb at once, go on from here to the subject which is even closer to young people: how to achieve self confidence, how to gain the courage necessary to meet life. They want to know this but are usually hesitant about asking. They somehow sense that if they admit a lack of sureness about their own abilities they will surrender to the dragon whose existence they have struggled so hard to ignore. I find it helpful to proceed gently but firmly into this discussion even when direct questions do not lead us there.

"Suppose we go a little further toward looking for the things that matter most in life. Did you ever stop to look yourself over—rather thoroughly, I mean? It is a good thing to look at ourselves occasionally if we can do it without getting a habit of thinking about ourselves and our motives constantly."

THE warning not to brood is necessary because once started on the road to self analysis, young people are likely to become too introspective. Many of them think about themselves in the wrong way altogether too much.

"And be honest. What traits do you have that will help you? What things about you are weaknesses that will stand in your way? It takes genuine courage to evaluate oneself; but once you learn how, you will find more strength than weakness to reward the effort. The only people whose weaknesses literally outweigh their strength are either dead or on public charge; you are neither of these, so you need have no fear that you will find more faults than virtues in yourself. Look for the things that are wrong with you, and determine to correct as many of them as possible. When you find some that cannot be corrected because they are not subject to human influence, learn to accept them. The shape of our nose, special talents or the lack of them, the acuteness of our eyes or ears, how tall we are—these are the kinds of things we must accept. But a bad temper, shyness in meeting people, moodiness, selfishness—these we can change. Almost any desirable trait of character can be had if we will try hard enough.

"But do not stop your self analysis until you have also carefully evaluated your strong points. The Greeks were right when they preached that the greatest of human wisdom is to 'know thyself.' Understand your weaknesses; but understand also your strength. And give yourself the spiritual benefit of thanking God every day you live for each asset that you have."

One girl who was taking this voyage of self discovery suddenly turned to me with the crisp brevity of youth.

"I see what you mean. What you don't have and can't get—get used to. What you don't have and can get—go *(Continued on page 855)*

UNDULANT FEVER:

● The Plague of Malta

By
ROYALL M. CALDER

WITHOUT GUINEA-PIGS OR RABBITS, EXPERIMENTERS ON THE MEDITERRANEAN ISLE OF MALTA TURNED TO THE HERDS OF GOATS FOR LABORATORY ANIMALS FOR TESTS.

IF YOU look at a map of Europe, just off the tip of Italy, as though shaken impatiently from the toe of a muddy boot, you will see three little islands. One is labeled Malta. On most maps it is no more than a dot, for in reality it is only about 17 miles long by 8 miles wide. Its political importance, however, is out of all proportion to its physical size.

Malta is rocky, and its tillable area is small. Its thin soil supports vegetation only because of a providentially high content of phosphates; and only by dint of intensive cultivation can the Maltese, thrifty though they are, eke out a living from the thousands of tiny farms into which the land is divided.

Historically there has been much of interest connected with the island. In the early days the Phoenicians sought refuge in the placid waters of its magnificent natural harbor. Later, St. Paul was shipwrecked on its rocky north shore. The Turks overran it but were subsequently displaced by Christian knights from Europe, organized as the Order of St. John ("of Malta"), who used it as a base of operations. Napoleon, realizing its strategic importance, conquered it; but the small garrison which he left in charge was insufficient to offset the anti-French sentiments of the Maltese; and thus, by the Treaty of Paris in 1814, it was awarded to the British, in whose hands it remains today.

But while its military history may intrigue the politically minded, medical men have long been interested in it for quite another reason. In the middle and latter part of the last cen-

tury, while army officers were passing their too generous leisure in play, while the notables were entertaining their favorites at banquets and balls, while the privates were vying with each other for the attention of the few female companions that the sparse population of the island afforded, the army doctors were worried about an obscure disease that seemed to be sapping the strength from the men under their care. Picked recruits—"England's finest"—or native troups from Africa, none seemed immune. Weakness, exhaustion and fever were the main complaints of its victims. In 1861, Marston, one of the medical officers stationed on the island, described the disease in this manner (with a free translation of a few of his technical phrases):

"By this is meant a fever characterized by the following symptoms and course: a preliminary stage of subacute dyspepsia, loss of appetite, nausea, headache, feeling of weakness, lassitude, and inaptitude for exertion, mental or physical; chills, muscular pain, and lastly, a fever having a long course, three to five or ten weeks, marked by irregular flare-ups and remissions, great derangements of the digestive organs, tenderness in the region of the stomach, and enlargement of the spleen. It is prone to relapses, has a protracted convalescence, and is frequently marked by rheumatism."

"So mild were the symptoms in some of the cases," says another medical writer of about the same time, "that it became a matter of nice discrimination to distinguish the sick man from the mere pretender. On the other hand, the patient sometimes appeared to have been completely prostrated at once by the severity of the onset. However, in many of these the suddenness of the attack was more apparent than real, for a careful inquiry often revealed a previous stage of dyspepsia, debility, and languor."

The doctors called it at first a "simple continued fever," which the British Tommy, apparently with a penchant for the alphabet somewhat reminiscent of our modern Washington officials, shortened to "S. C. fever." Then, either forgetting what the initials stood for, or perhaps merely giving vent to his disgust at the seeming endlessness of his malady, he evolved "slow continued fever."

Outside the island of Malta, physicians were inclined to call it Malta fever, but the Maltese, native and adopted persons as well, vigorously objected to the name as a reflection on their country and countered by calling it Mediterranean fever. As a compromise, Hughes proposed that it be called undulant fever, because of the wavelike appearance of the temperature curve; and this has survived to the present as the name-of-choice, although, as I shall point out later, none of these names suitably describes the disease as we now know it in this country.

In 1887 a young army physician, David Bruce, was sent to Malta for duty. Fresh from medical school and penniless, he had joined the army so that he might get married. His salary of a thousand dollars a year could hardly support the two in luxury; but Mrs. Bruce shared her husband's enthusiasm and scientific curiosity, and it was not long before they were busily at work in a little shack which it pleased them to call a laboratory, seeking the cause of this strange disease that was plaguing the inhabitants of Malta.

Soon they succeeded in isolating a microorganism, or germ, which they believed was the cause of all the trouble. But about this time, Bruce was transferred to the wilds of Africa, where he undertook a study of sleeping sickness—an exciting story of a fight against a

TWENTY YEARS LATER BRUCE RESUMED HIS EXPERIMENTS AT MALTA, WHERE THE DISEASE HAD CONTINUED UNABATED.

disease that had to be overcome before white men could penetrate the Dark Continent, but a story that would lead us away from our present account.

It was almost twenty years before Bruce was again sent to Malta. Meanwhile the disease had raged with its old ferocity, and hundreds were sick from it. Bruce needed experimental animals for his researches, and the usual animals used in the laboratory, such as rabbits and guinea-pigs, were not to be had on the island. Goats, on the other hand, were obnoxiously plentiful; and six were purchased for the experiments. To the surprise of everybody, it was found that all the goats were infected with the same organism that Bruce had recovered from his patients twenty years previously.

With this fact as a lead, it was soon determined that the organisms were present in goat's milk and that it was in this way that the infection was kept alive and transmitted to man. By the simple expedient of issuing army orders that no more goat's milk was to be consumed, it was possible to eliminate the disease almost completely from the island, and since that time, instances of this infection have been rare indeed.

So ends the story of the disease in Malta; but so begins the story of the disease in this country. Texas, the ranchman's paradise of thirty and forty years ago, was attracting hardy pioneers from the rest of the United States. These men wanted the best stock they could find for their pastures. Malta's goats were justly famed among ranchmen the world over; and so they were imported to the Southwest, bringing with them the seeds of the disease, Malta fever. In 1911 the first cases in this part of the country were reported, to be followed in a short time by yet other cases.

Then interest died out, until in 1922 a startling epidemic occurred in Phoenix, Ariz. In April of that year a herd of goats was brought in for the purpose of supplying milk. The industry flourished, and by June more than 800 quarts were being consumed daily. Among the four or five hundred persons who drank the milk, forty known cases developed within the next three months.

These sporadic cases and small epidemics in the Southwest were of comparatively little interest to physicians in the rest of the United States, and they complacently assumed that the disease, although interesting as a scientific curiosity, did not hold any practical importance for them or their patients. But they were wrong, as has now been abundantly proved. In order to understand why they were wrong, it is necessary to go back a few years and learn what was happening across the Atlantic:

In 1898 a Danish veterinarian, named Bang, interested himself in the problem of infectious abortion in cattle, a disease which causes great economic loss among cattlemen the world over. In the course of his studies he isolated a micro-

organism which he proved was the cause of the disease. In 1914 a similar organism was discovered in swine by Traum of the U. S. Department of Agriculture. But still the connection between these organisms which cause abortion in animals and the germ which causes Malta fever was not suspected.

Here is where Miss Alice Evans, senior bacteriologist of the U. S. Public Health Service, enters the picture. She was detailed to study the bacteriology of milk offered for sale in various parts of the country. In the course of her work she found a tiny bacillus in many samples of milk. At first she was not inclined to ascribe any importance to it; but it occurred so frequently that her curiosity impelled her to undertake an investigation to find out the nature of the organism with which she was dealing. She early recognized that it was very similar to the bacterium that Bruce had found in Malta. She also noted that it fulfilled the descriptive criteria for Bang's bacillus; and as a result she began to suspect what she later proved, that infectious abortion in cattle and undulant fever in man are so similar as to be almost one and the same disease. Moreover, knowing that infectious abortion was widely disseminated among cattle in this country, she prophesied that physicians, if they looked, would find its human counterpart among their patients.

Her prophesy was given little credence, however, until in 1924, Keefer, then an intern in the Johns Hopkins Hospital, isolated an unknown organism from the blood of one of his patients with an obscure fever. His chief, remembering Evans' work, sent the culture to her for identification; and thus it was that the first human case of this disease derived from cattle was put on record.

Stimulated by Keefer's report, physicians then began to look for the disease in earnest, and each year since has seen more and more cases reported. From 1905 to 1924 (the time of Keefer's report) only 128 cases had been reported in the entire United States; in 1925 there were 24; in 1926, 46 cases were recognized; in 1927, 217; in 1928, 647; and in 1929 the amazing total of 1,505. These figures include, no doubt, only a small percentage of the cases. They do indicate, however, that as clinicians have become more alert to its presence, more and more cases are being diagnosed. It is significant, moreover, that the public health reports of recent years have shown that no state in the Union is free from the disease.

ONE great obstacle to the recognition of the disease has been that its manifestations are extremely varied. The descriptions of the malady as it occurs in Malta are misleading when the attempt is made to apply them to the disease as seen in this country. Indeed, both parts of the common name "undulant fever" are misnomers, for of the cases seen in the United States relatively few have shown the wavelike fluctuations of temperature characteristic of the true Malta fever, and, moreover, many cases are now on record in which fever has been conspicuously absent.

It is impossible to present adequately a picture of the "typical" case, for the typical case may almost be said not to exist. Great variation is seen from one patient to another, but certain symptoms are common to almost all. Chief among these is weakness. The victim arises in the morning feeling well and ambitious; but by midmorning he is ready again for bed. This lassitude gradually increases, and finally he develops an actual aversion to effort of any kind, mental or physical. His appetite fails; his digestion is poor; his head aches intensely and almost constantly; his back may ache, or he may have pains in various joints, suggestive of rheumatism; he loses weight; he becomes nervous—"jittery," the modern patient will say—and this symptom progresses often to profound depression until the unfortunate victim is convinced that the whole world has turned against him.

UNPREPARED to believe that he is actually ill, he usually blames himself for his difficulties; and the advice of his friends that cure will come from his acquiring "the proper mental attitude" does not add to his happiness. When finally he seeks medical aid his attitude is likely to be one of apology; and his physician, finding nothing definite on physical examination, is likely at first to consider him neurotic. But when the temperature is taken, the clue is furnished, and thus, finally, the solution of the problem becomes apparent.

Undulant fever, however, is often more deceptive than this outline would indicate. The fever is prone to remissions; and during these remissions the patient may or may not suffer from some of the complaints that beset him during the more acute stages. If he happens to consult his physician during one of these interval periods, it is easy to see how the true nature of the malady might escape detection.

A young man whom I know acquired the infection in the course of his work in the laboratory. His symptoms resembled those of influenza in every respect, and the case was so diagnosed clinically. Had it not been for a routine bacteriologic study of his blood, the real diagnosis would have been missed. His febrile episode lasted only seven days, but he was incapacitated for a full year thereafter, in spite of the fact that he never again had a rise of temperature.

The deceptive nature of undulant fever becomes especially apparent when we consider the large number of diseases which it mimics. Many cases pass for *(Continued on page 806)*

SNAKES IN THE SERVICE OF SCIENCE

By Lee D. Cady

THE FACT that the medical emblem contains a staff with a serpent twined around it is no guarantee that all doctors pet snakes. A student of the same emblem will also see a pair of wings similar, no doubt, to those on the heels of the Roman god Mercury, the fleet. These wings might also signify a dignified means of escape once the serpent became coiled around one's staff.

Yet, feeling this way about snakes, calm and cold reason should tell one that the poor snakes have been more maligned than they deserve. These horrid, beady-eyed brutes may soon come into their own, like cows, chickens, beagles or canary birds, but never quite like lap dogs. Almost any zoo now is practically a "snake dairy" at times, and snakes are being "milked" for their poisonous venoms.

According to those who know most about it, snakes may be divided into two general classes: the poisonous and the nonpoisonous. All belong to the high sounding order of Ophidia, not a secret society but a biologic family tree. One branch of the serpent tree fork is the Colubridae, and the Viperidae is the other. Each of these main branches has limbs and twigs which are harmless. For example, the garter snake and the black snake are harmless colubrines. The cobra is also a colubrine, but deadly.

Venturesome persons have put snakes to many different uses. The skin of the deadly Florida beadsnake (Micrurus fulvius) is black with broad crimson bands bordered in yellow and makes a unique belt or hatband. It is said one may now purchase canned snake meat if one cares to tickle a fickle palate with its "chicken-like" flavors. Snake oil nostrums may be rubbed on aching "rheumatic" joints.

THESE NOW-THOUGHT-TO-BE HORRID, BEADY-EYED BRUTES MAY SOON COME INTO THEIR OWN AS PETS.

Painful as it may be to some to have this knowledge divulged publicly, spiritous liquors are not the best antidote for snake bite. The chief service of this remedy is to render the snake bitten person more or less indifferent to his predicament, or enthusiastic, perhaps, about being bitten again. The antivenin serum injection of the proper sort is by far the better for the saving of life or the amelioration of symptoms.

It has been known for many years that if one has had the good fortune to survive the first bite, one has a much better chance to live after the second poisoning from another snake of the same species. This may be comforting knowledge, but the hardbitten professionals do not have their favorite rattlesnake give them an eye opener of venom every morning.

Venomous snake secretions have, in the main, three poisonous elements in them. These vary markedly with the species of the snake, and the kind of antivenin to be used in a snake accident must fit the case. The colubrine snake venoms possess a predominantly neurotoxic action; that is, they are poisonous to the nervous system. The hemolysin of venom has a way of breaking up red blood cells. The hemorrhagin element rips the lining out of blood capillaries.

The place bitten may show little inflammation and little bleeding after colubrine bites, but the stricken person soon becomes unable to speak, has nausea and vomiting, lapses into a state of medical shock, and dies of paralysis of his breathing apparatus. All this may happen so quickly that practically nothing may be done before death if the fangs of the colubrine have injected the venom directly into a blood vessel.

The Viperidae are also a motley and mottled crew. They usually fight any one who wants to fight them. Their tempers become not a whit better than they were made. This group, which is notorious for being the most poisonous in this country, consists of the rattlesnake, the copperhead and the water moccasin. They are often called pit vipers, not because they may be found in pits but because of the little blind pit in front of and below their eyes. Some scientists like

to call this "trium-viperate" the Crotalinae because of this pit in their faces, and they name the snakes without this pockmark the Viperinae.

The venom of these pit vipers contains a predominance of hemorrhagin, or the principle which destroys the lining of blood vessels so that blood escapes into the tissues where it does not really belong. Their bites cause much painful swelling, and black, blue, purple and even greenish discolorations. The swelling spreads up a limb or from any place in which the venom was deposited by the snake's fangs.

The venom of the daboia (Vipera russelli) and the Bungarus have an interesting ability to cause blood to clot very quickly, even while circulating. A few clots in a vein can embarrass the right side of the heart and cause no end of practically instantaneous trouble in the lungs. Then if a little of this fascinating stuff happens to get through the lungs in a matter of from ten to fifteen seconds and starts the clotting process beyond the lungs, the victim of daboia bite may be dead in considerably less than a minute.

Venoms usually contain other substances, called ferments, which cause a softening and destructive effect on the proteins of body cells. Some venoms may even prevent the blood from clotting.

Considering how these violent poisons of snake venom act when uncontrolled, there are just as interesting speculations as to how their violence, like that of dynamite, may be controlled and put to good usage. For, though dynamite is exceedingly violent as an explosive or as a poison administered accidentally, many patients with angina pectoris soon sigh with relief from their pain after a tiny drop of a dilute solution of nitroglycerin is given under the tongue or hypodermically.

The toxins, or poisons, of venoms are specific proteins. That means that if tiny amounts are to be injected into an animal it will manufacture antibodies to neutralize them and will have these antibodies circulating in the blood serum. A few weeks of gradually increasing injections will see an animal able to withstand the shock of an otherwise fatal dose of venom of the same sort with little or no inconvenience. The serum, or the liquid part of the blood of such an immunized animal, can be used to save the life of an untreated or a nonimmune man poisoned with the same kind of venom.

In other words, any colubrine antivenin is practically worthless in viperine bites, and vice versa. Yet the antivenin for the rattlesnake may do some good in copperhead and moccasin bites but not enough to be satisfactory. Consequently, manufacturers of antivenin in this country have pooled antivenins for all three if the doctor wants it that way.

Still, if one prefers being obdurate about the use of antitoxic serums and insists on working up one's own immunity, one might do so with snake bites or prepared venoms. After the bagatelle of the first snake bite becomes history in the victim's misspent life, he must persuade the snakes of other species to bite him lightly. This is an unreliable method because snakes are notorious for giving all the venom they can while in action. Also, age, maturity and recent and remote experiences of the snake have a bearing of the quantity and quality of venom. No doubt there are individuals who thus have a polyvalent antivenin in their blood for pit viper bites. This, according to herpetologists, is the old-fashioned way of making one's own polyvalent antivenin.

Some venoms are too violent to risk in this old-fashioned manner, as shown by the accidental experience of Mr. R. Marlin Perkins, herpetologist to the St. Louis zoo, a few years ago. His Bitis gabonica, the largest African viper, became too intimate with the tip of his finger for just an instant. Promptly the toxic symptoms struck him. Such antivenin as was available was administered, but he was unconscious within thirty-four minutes.

Perkins, gasping for breath because of his poisoned nervous system and because there had been a tremendous and sudden breaking down of his oxygen-carrying red blood cells, was taken to the nearest hospital, where he was given blood transfusions. Blood was literally poured into him until this breaking up process stopped and he had enough intact red blood cells to serve him. After that, anxious days were endured while he was watched closely to ascertain whether or not his liver, lungs and kidneys were going to survive the effects of this deluge of poison and fragmented red blood

THOUGH PAINFUL FOR SOME PERSONS TO HAVE THIS KNOWLEDGE DIVULGED, SPIRITUOUS LIQUORS ARE NOT GOOD FOR SNAKE BITES.

cells. That alone may kill people. Perkins recovered and was soon back on duty, but almost two years passed before he felt entirely normal again.

Suppose a doctor had patients with severe pain which required increasingly large doses of narcotic drugs to relieve. Desperately he would want something which would relieve these patients for longer intervals, or more completely, without disagreeable after-effects. Might he not think of some way to tame the nerve poison in cobra venom and see what it would do? If he were endowed with originality of thought, the courage of his convictions and a sincere desire to fulfil his Hippocratic mission in life, he might.

First he would dissolve some of the dried cobra venom in dilute salt solution and get the germs out of it. Then he would probably standardize the venom on mice. Common experience has taught him that a "mouse unit" of venom would do little or nothing even to a very sick patient. In this case he found it so and gave a larger dose and a still larger dose to his suffering patient, who asked him to "try anything" which might help. He might learn that from 2½ to 15 mouse units gives better and more prolonged relief from pain than tricky narcotics, and should he give a little too much the tamed nerve poison causes an increase of pain but is followed by the usual relief. At least that is what Drs. Lagnel-Lavastin, Koressios, Tagnet and Orticoni of France have done. Other doctors of Europe and America are now working carefully with cobra venom to learn more about it and its uses.

Let us assume we are trying to solve all the mysteries of why human beings may bleed into their own body cavities, their own tissues or externally. We already know much about why such people bleed, but we are by no means satisfied with what we know about stopping the hemorrhages.

We already know that snake venom contains hemorrhagin. That is a start, but it is not quite rational enough to try on human beings for it might make our patients even worse. But we propose to work with animals and preserve a critical attitude about our rather startling idea of stopping bleeding with something which may produce dangerous bleeding. We select moccasin (Ancistrodon piscivorus) venom because it contains hemorrhagin. We experiment with this dangerous material for more than a year before we are sure we know enough about it to use it in a practical way.

Meanwhile, we have learned a few facts about what moccasin bites really do to the animal body. By means of dilution of the venom we have analyzed the events as one does with a slow-motion movie. Different snakes have different strengths of poison and different proportions of the poisons within the poison. Some may produce nervous symptoms, some may produce hemorrhage. It is discouraging for our objective thus far. Then we discover that, independent of these two poisons, there is something in our moccasin venom which actually does stimulate the body to build up a resistance toward bleeding. We have proved our original idea was wrong, but we have found the right one.

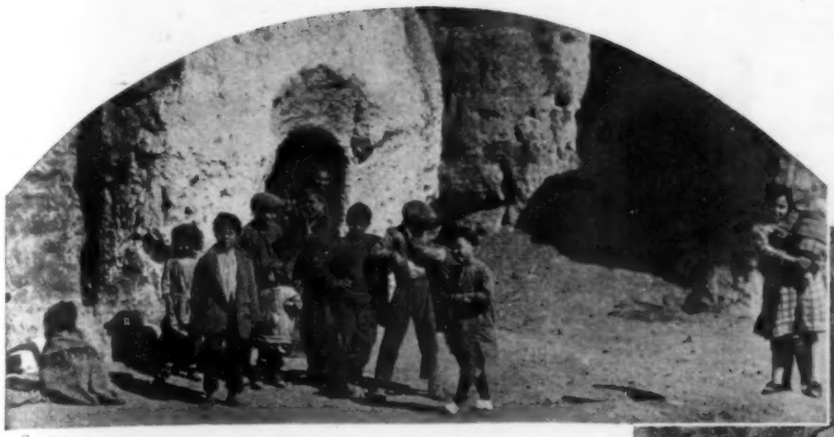
This was the situation in which Dr. S. M. Peck of New York found himself. He interested others in the various angles of his research, and they eventually tried the venom dilutions on bleeding human beings. This peculiar substance he was working with seemed to do something to the delicate blood capillary walls, making them tougher so that the blood would not leak from them so easily. It actually caused many of these chronic "bleeders" to stop bleeding.

The failure of blood to clot has been another distressing fact for doctors to face. This is especially true in the disease called hemophilia. It is a hereditary disorder of males and is rather famous of late, because "bleeders" occur in the Bourbon strain of blood in the European nobility. However, hemophilia is no royal disease.

Drs. R. G. MacFarlane and B. Burnett of England became concerned about the deficiency of hemophiliac blood. They learned that daboia venom from Russell's viper could kill by clotting the circulating blood. They began to tame it by the usual dilution method and learned some astonishing facts. Normal blood clotted almost instantly if a minute trace of the daboia venom were mixed with it. Hemophiliac blood, which does pretty well to clot in from thirty to forty minutes and sometimes will not clot under four to forty hours, actually clotted more quickly than unchanged normal blood, and with a good firm clot too; that is, only 1 part of venom in 100,000 of hemophiliac blood clotted it in seventeen seconds. That was 125 times faster than the same blood would clot if left alone in a test tube. As a result of these experiments the experimenters found that germ-free daboia venom, diluted from 1 to 10,000 or from 1 to 100,000 times, was a successful medicine to apply to any sort of bleeding spot.

So there is good reason to think that the snake-taming doctor of today is beginning to agree with that old visionary, Dr. James W. Wallace of Fauguer, Va., who in 1824 was eating his rattlesnake venom mixed with cheese. He predicted that sometime we would be raising snakes as a drug factory. Centuries before that time, Aristotle had said: "The so-called septic drug is made from the body of the animal and is the only remedy known for the bite of the original."

Homes in Foreign Lands



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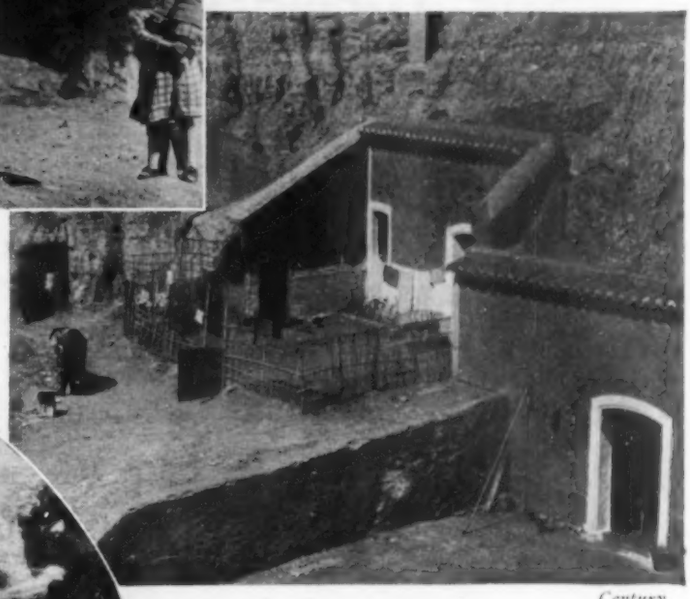

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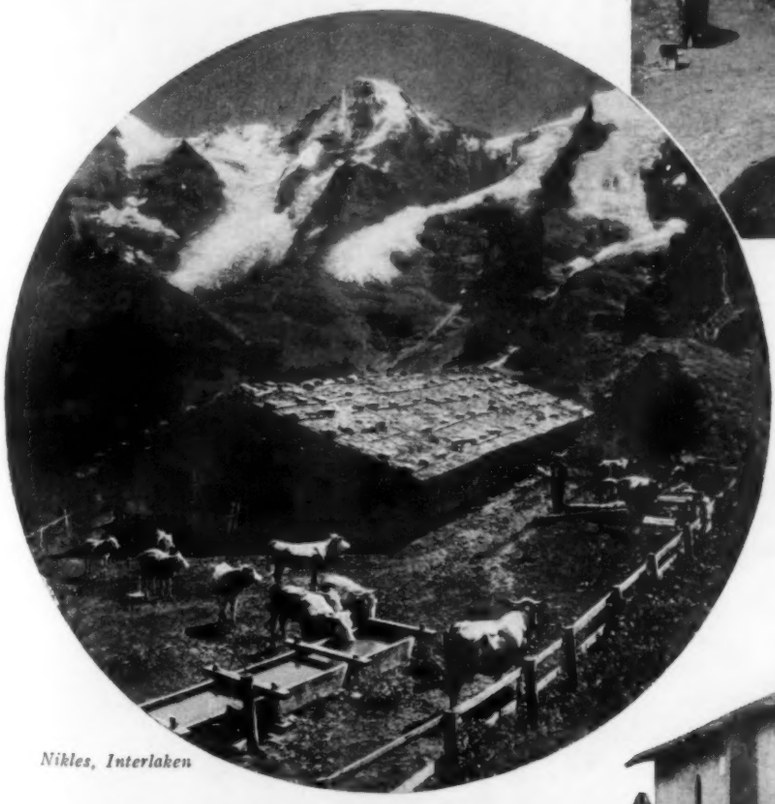

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FARM LIFE OFTEN CENTERS IN ONE FRAME BUILDING WHEN ONE'S HOME IS BENEATH THE SHADOWS OF THE SNOW-SPECKED ALPS.

Galloway

THIS SCENE WAS TAKEN IN A LITTLE BACK-COUNTRY TOWN IN ALSACE, FRANCE.

Century

MARAUDERS SELDOM THREATEN THE ELEVATED FOOD CACHES OF THE ESKIMOS.

At Home to Safety—

THE AMERICAN FAMILY SPEAKS

By Eleanor Everet

AN AMERICAN family turns the key in the lock of a new home. They stand on the threshold of a new experience, which they earnestly hope will be a happy one, unmarred by illness, reverses, accidents or death. To each one the home instinctively represents in some degree a refuge, a place of safety and protection. There is indeed no real reason why every modern home cannot be. Household gadgets and labor-saving devices, stairs, high shelves, wires and fixtures, matches, stoves, rugs and furniture readily yield to safety practices. For safety is not a gadget but a state of mind, of willingness to think before one acts.

Meanwhile the "getting settled" process is well under way. Mother unpacks, unfolds and gets things in place while Father plays handy man. The children run errands and give a lift here and there in the delightful uproar. Working together, this family is happily building toward an ideal—a real home. Perhaps unconsciously the parents are planting the essentials on which safety methods thrive: cooperation, thoughtfulness, individual responsibility. The safe and at the same time comfortable home necessitates an atmosphere of mental poise and understanding. Friction is no more dangerous between matches than between individuals.

MOVING INTO A NEW HOME! NOTE CAREFULLY THAT ALL HOUSEHOLD GADGETS, LABOR-SAVING DEVICES, STAIRS AND FIXTURES WILL YIELD TO SAFETY METHODS.

The outside world of industry and motordom is subject to widespread safety rules and regulations. But "a man's house is his castle." In other words the home is inviolate. The family has to be its own foreman, its own traffic policeman.

In that case a safety tour of the new home is thus in order. Let's look at the kitchen first. While this is more or less Mother's private kingdom, perhaps the whole family will want to see how it's going to be arranged for her greatest convenience. They might all be surprised to learn that the kitchen has won the tragic title of the most dangerous room in the house. In this particular kitchen the floor will not be highly polished. If linoleum is used it will be free from rents or turned up corners. A sturdy stepladder will give Mother or the maid a safe boost to high cupboards. The stove burners will be kept constantly adjusted to prevent any production of deadly carbon monoxide gas. The electric iron will have an asbestos pad or a metal platform to rest on while Mother discusses the club's annual luncheon over the telephone. Tin cans and bottles will be disposed of promptly and will not be thrown into wastebaskets where tiny hands love to explore.

More fatal burns occur in the kitchen, and more fatal falls occur in the bedroom, but the living room has the distinction of ranking second in both of these major causes of home accidents. Does Mother prize her antique chairs and other heirlooms? She will preserve their antiquity either by repairs or by removal to unfrequented corners. Footstools will be so arranged that no one will stumble over them headlong. Fires in the living room have their source in, or most frequently near, ash trays and the fireplace. Matches and cigar and cigaret stubs carelessly strewn around touch off more conflagrations than anything else. Embers that might leap on unsuspecting carpets should be imprisoned by tightly fitted screens that reach to the fireplace mantel. People have been killed when heavy pictures fell down on them. Pictures can easily be hung securely and at the same time attractively. Floors need less wax and more polishing to prevent their being extraordinarily slippery. Old-fashioned, open electric wall sockets should be plugged. Bridge tables, books or rocking chairs still do not make safe stepladders. The correction of these several hazards tends to make the living room practical evidence of a harmoniously run household.

Getting out of bed at night, half dazed with sleep, and stumbling over a chair, an open bureau drawer or a throw rug are too frequent causes of obscure tragedies in the bedroom. In our modern household, Mother will see to it that each bedroom has a clear path from bed to door. A dim light left burning in the room at night will further protect the sleepy one. Smoking in bed has been a forerunner of too many newspaper obituary items. The careful housewife will also see that no one in her home ever goes to sleep with an electric heating pad turned on. Any pad is hazardous when damp. A hot water bottle is preferable. Why should electric heaters never be left on at night? Because any small aberration of the reflector can focus the heat on a certain point of glass and ignite curtains or bedclothes surprisingly far away from it. The bedroom is the place to use such electric appliances as an electric curling iron. The wary woman takes no chances with shock from wet

THE LAST STEP OF THE BASEMENT STAIRS IS PAINTED WHITE TO ANNOUNCE THAT THE DESCENT IS SOON TO BE FINISHED.

appliances, a possible occurrence in the bathroom. If the bedroom is used as a sewing room, pins, needles, pointed scissors and the like are not good playthings for children. Such implements fare better under cover.

During this brief round of the new home we come inevitably to the hall and the stairway. First of all the family takes note that doors open into adjoining rooms rather than into the hall; there is adequate light; chairs and racks do not clutter the hall; the carpet is securely fastened to the floor; there are no small throw rugs, especially at the bottom or at the top of the stairs; dual light control on the stairway allows for turning light off or on at the bottom or the top; there is a substantial handrail; stairs and steps comply with the recommendations of the U. S. Bureau of Standards, which state that the slope should be between 30 and 38 degrees, the risers 7 to 7½ inches high, and the treads 10 or 11 inches wide, respectively; there is ample head room.

THE basement stairway is liable to be the ugly duckling of the house. Because appearance is not important it may be too steep, too skimpy or minus handrails, head room and adequate light. Broken steps are too often ignored. A surprising number of persons, says a National Safety Council pamphlet, fall from the lowest step of the cellar stairs, thinking they are already on the floor. Father could paint the bottom step white as a kind of bulletin board announcement that the descent is then over. Brooms, mops, waste baskets, canned goods, polishes, nails and tools are not going to be stored on the basement stairway if Mother has anything to say about it. She may also have learned, painfully enough, that carrying great loads on stairways is dangerous anywhere in the house.

Now that the basement is coming in for its share of inspection, it would be well to point out that a large share of home conflagrations get their start here. Both furnace and pipes should be far enough from the walls and woodwork to avoid overheating. The nearer surfaces would probably appreciate asbestos coverings. Before the furnace fire begins its long pull through the winter, flues should be cleaned out and all necessary repairs made during every fall. Pipes and joints should be free from rust. Chimneys need cleaning from cellar to roof. Ashes will be put into metal containers only. It is only too obvious that kerosene and gasoline were never intended as fuel for furnace or grate fires.

Over near the washing machine the laundress makes an effective target for defective electric cords or wiring. Porcelain electrical switches will be used instead of the common brass ones in this particular basement. Cords exposed to water will be rubber coated. The fruit storeroom, the tool shop and the washing machine itself harbor potential hazards to the careless one who neglects to turn on sufficient light, use stepladders, goggles or gloves and to keep hands and fingers well away from revolving wringers.

The safety tour then adjourns to the yard. Are porch railings and steps in good repair? Are garden tools and lawn mowers under foot? Bird baths and pools are decorative but danger-

ous where heedless youngsters are concerned. The heavy cement or iron baths topple over far too easily, and into the pools the youngsters topple over far too easily also. Rubbish and trash behave better when burned in a close mesh wire container on a day when little wind is blowing.

One simple rule, meticulously followed, will avert tragedy in the garage. Always open doors or windows before starting the engine of the car. Any one who forgets to observe this practice cannot even smell the penalty that is inevitably on the way: carbon monoxide gas, which is odorless. Sometimes there are no warning symptoms before the victim is overpowered. Greasy rags lying around the garage are bait for fire. They may ignite spontaneously. The floor needs to be kept free from slippery oil and grease accumulations.

Children are a vital consideration. The adults in every home should look at the question of safety not only from the standpoint of their own protection but from that of the children, according to Miss Katharine Fisher, director of the Good Housekeeping Institute in New York. Young children are curious. Their urge to investigate often gets them into serious trouble. Toddlers need the constant protection of a gate at the head of every flight of stairs in the house. Hooks for the youngsters' clothing should be hung low enough to offset the temptation to stand on chairs or stools.

The mother who spends a fidgety half hour while her children are on their way to school should save her concern for the hours they are at home; 32 per cent of all accidents involving school children occur at home and only 9 per cent on the way to school. The mother of our modern family knows, for instance, that cheap toys are dangerous. The children are liable to swallow the whistles of cheap horns, which may lodge firmly in their lungs, or to suck off paint that never was intended for little mouths. Electric trains operated with household current must be of the finest type to prevent any shock. Air rifles are dangerous any time and anywhere. What Mother can do when Johnny insists on keeping her company in the kitchen is to make a habit of placing pots and pans on the stove so that all handles are turned inward, away from inquisitive little hands. Marbles, small buttons, safety pins and common pins are never wise playthings for a baby.

A DOCTOR once told a group of young parents that, while their children no doubt created many a problem for them, they must not overlook the fact that they themselves were a fruitful source of problems to their children. Bringing up youngsters on the strength of the word "don't" will never teach them real obedience or responsibility. There is the story of the anxious mother who, hearing no sound from her young son for some time, called to her daughter, "Mary, go see what Billie is doing and tell him he mustn't." Unpleasant nagging gives little encouragement to the young child to perform his few duties around the house regularly, cheerfully—and safely. Taught early in life to clean up their own rooms, "pick up" after play is over and leave the bathroom in order, children will grow into habitually careful adults, as careful on the street and in their daily work as they are at home.

Children are born imitators. They learn much more thoroughly than their parents may realize, by simply watching what "grown-ups" do. The lights in the living room go out. Father goes to investigate. He finds a fuse blown out. Father knows a good trick; he puts a penny behind the fuse and screws it back tightly. At once the lights go on again. But somewhere along the line the wiring is getting hotter and hotter. The insulation begins to melt, and the house is on fire without warning.

How many people know that the round kind of goldfish bowl can be a real fire hazard? If it is set near the window, the sun, striking it, is focused to a point of heat potent enough to set fire to even a well waxed floor. Ordinary flour and cornstarch are highly explosive. When it is necessary to sift either one the housewife is careful to keep the breeze from an open window or electric fan from blowing the fine particles near an open gas jet. An important "don't" for today's sunbath fans is never to nap in the sun with glasses on. One young man failed to observe this safety rule one afternoon and woke up blinded. Before the pain had eventually aroused him, his eyes were so badly burned that he later lost the sight of both the eyes. A newcomer to the field of home hazards is dry ice. This carbon dioxide in solid form, with a temperature of 109 degrees below zero, can "burn" the skin severely and cause serious injury if swallowed.

Many persons think nothing of observing every traffic sign and law, but they will continue risking falls in their own bathtubs through failure to use a rubber suction mat. A housewife will never allow a fire to be started with kerosene or gasoline, but she will take all sorts of chances in the name of economy, cleaning the family wardrobe at home with gasoline or naphtha. Even the fumes are highly inflammable.

It is clear that accidents do not just happen; they are caused. They ravaged American homes last year leaving some 34,500 persons dead and approximately 150,000 men, women and children disabled. The $500,000,000 annual property loss from fire can be graphically represented by the fire ruins of dwellings placed in a solid row on one side of a highway extending from New York to Chicago, a distance of about 900 miles. An automobile accident is as

public as the highway on which it occurs. A home accident, a hip broken in the bathtub, is scarcely a topic for wide discussion. Carelessness is to blame. This in turn is predicated by lack of knowledge, says a Red Cross bulletin published in connection with the home and farm accident prevention program. Carelessness can kill as permanently as deliberate intent.

Suppose this modern family refuses to believe their home can be unsafe in any detail. Suppose they say collectively that science has done away with all the old-fashioned hazards and given the modern home electricity, gas stoves, excellent chimneys, furnaces and other invaluable aids. In such a mechanical era we can't help but be safe, they add.

THE effective safety code at home, however, means keeping all this fine, serviceable equipment in good repair, with no makeshift or foolish risks involved. It means, according to Good Housekeeping Institute, the recognition of possible hazards and the avoidance of them; the correction of conditions that cause even the slightest mishaps. Then and only then, can a home be a restful place in which each member of the family starts the day free from fatigue, worry and other mental hazards.

At this point the mother of our modern family speaks of certain potent "reminders" in regard to home safety.

Safety in our home is a matter of common sense. If, some night when we come home, we notice the smell of gas, no one is going to start on a voyage of discovery with a match, a candle or any other open flame device in hand. If the leakage is found to be a small one, it can be stopped with soap while we call the gas company for permanent repairs. We can't afford to let cracked or loose-end tubing try to continue giving service either. The children have been taught never to light any gas or light fixtures, or to monkey with anything in the garage. By the way, we never lock them up alone in the house.

No one dares to use any kind of portable electric appliance in such places as the basement, laundry or bathroom, or to handle them under any circumstances with wet hands, when standing on a wet floor, when in contact with a water faucet, radiator or any other grounded metal object. Water is much too swift a conductor of electricity. Electric heating pads and quilts we use with great care, if at all. When we bought the new radio we had the man make sure that poles for the antennae were guyed so that they could not fall in any direction, even if the wire itself broke. He was careful, too, not to have the antenna cross telephone poles, power wires, railroad tracks or public highways. During thunder showers we usually disconnect the outdoor antenna from the radio set and connect it to the ground with a double-throw switch. The children, of course, never climb poles or trees near where electric wires pass, nor do they fly kites near such wires.

We once heard of a man who was working in his back yard and accidentally came in contact with a broken live wire which electrocuted him. His wife tried to rescue him, using her bare hands to do so. She was killed. A neighbor who attempted to rescue both man and wife was killed also. A dry wooden rake handle would have saved his life and aided in the rescue. A man out in South Dakota was electrocuted one night when he tried to turn off an electric light while standing in the bathtub. In our home we have the wiring done right in the first place. It's the most economical thing in the end.

No one has had an accident in this household caused by taking a dose of the "wrong medicine." All the poisonous products (we keep them down to a minimum) are plainly marked and have a shelf all their own in the medicine cabinet. They are *not* side by side with prescribed medicines. As for that other cause of sudden death—guns—we keep the things where the children can't find them, and we're mighty careful with them ourselves.

We've tried to outlaw falls by having nonskid material put under all the rugs, and special bars and a rubber mat in the bathtub. The children adore doughnuts, and whenever I make them I heat the fat very slowly, in a pan only about two-thirds full. It's so much easier to prevent a fire than to extinguish one. Nevertheless, we know what to do in case we smell smoke; keep the doors shut. One breath of intensely heated air and smoke can have unfortunate results. In dense smoke one can tie a wet cloth over the mouth and nose and crawl to safety. Jumping from windows is only the very last resort. If clothing catches on fire, it's best not to run but to lie down immediately and wrap up in a blanket, overcoat or rug to smother the flames. All in all, we are as safety-conscious a family as I know. Safety is like health with us; we couldn't have a real home without it.

The American Red Cross would like to have every family in the United States aware of the importance of home safety. To this end a home inspection campaign was launched last fall, enlisting the aid of the school children. Both parents and children were encouraged to make actual inspection tours of their homes to check on possible accident hazards. First aid knowledge was emphasized as a valuable safety aid.

Home safety is both an individual and a collective family proposition. The responsibility should be anything but a burden. Consistent vigilance brings its own reward in added convenience, attractiveness and peace of mind in the home. To every family, home should be not only the dearest but the *safest* place on earth.

For the SCHOOL LUNCH BOX

By E. M. GERAGHTY

"I'M GOING to pack the children's lunches this year," Margery Thayer was saying. "Yes, I know the school has a grand cafeteria, and the prices are reasonable. But I am not sure that Katherine knows what to pick out, and I'm certain that Robert doesn't eat enough fruit and vegetables. They are in such a tear to get off in the morning that they don't always eat as much breakfast as they should. Also, if they are to get in a quart of milk a day with all the fruit and vegetables Dr. Johnston says they should have, I must know what they eat at noon as well as at breakfast and dinner. What do you think of the idea?"

"It sounds very reasonable to me," I replied.

"I've never packed a lunch box in my life and I hardly know where to start. I did get two nice looking little satchel affairs with a vacuum bottle in each. And I thought I'd get some paper napkins and some paper spoons. I've got lots of odd glass jars at home to put fruit and stuff in. And I always have waxed paper.

"But what am I going to put in the boxes? Sandwiches and cookies and milk and fruit . . . all right for a time but won't it get monotonous? Things are served so attractively at the cafeteria . . . can I make the box lunch just as appealing? You could tell me some things to put in if you have the time. Would you?"

I told her I'd be glad to help her and I would write out some menus and send them to her. In the meantime, I thought I would suggest some supplies for the boxes.

"Paper napkins are bright colored and seem to have a wide appeal, but they are not much real help in keeping spots off the school clothes. And there should be something to spread on the desk before the lunch is set out. Why not get pieces of bright crepe or gingham, about 12 by 20 inches for tray cloths? About a 10 inch square for the napkins would also be nice and fringe the edges. Katherine would love these. Robert would probably prefer all white. Fold the tray cloth and put it into the lunch box the last thing.

"You spoke about odd glass jars to hold fruit. I'm always a bit afraid of glass in lunch boxes. You know how the children run and bang their boxes up. They might just happen to get glass in the food. You'd better play safe and get a supply of those heavy paper containers with tight fitting lids. And get a few boxes of tiny paper ramekins to hold salad dressing. Some salads are so much nicer if the dressing isn't put on until noon.

"How are they going to carry salt and sugar? Wrapped up in paper isn't very satisfactory. Why not get a little red metal shaker for salt and a little blue or green one for sugar? And I wouldn't bother with paper spoons and forks here either. Give them silver ones; they are much easier to use and last for all time. Get some cellophane, clear and colored, to use occasionally to wrap salad greens or sandwiches and cakes. I've wrapped a salad in cellophane early in the morning and it was just as fresh as could be at 5 o'clock. The greens look most attractive through the clear paper, and a frosted cupcake looks just twice as good when it's in cellophane. Also, I would suggest buying some straws so they can get their milk easily. Children love drinking through a straw."

"That just sounds splendid," Margery exclaimed. "You know, I think I'm going to enjoy packing these lunches. It will be like a picnic every day."

"Well, I hope you'll continue to like picnics. But you can make a great game of it and you'll be sure the children are getting balanced food."

"Can you send me some of those menus next week?" she asked.

"Yes, and I'll keep them simple and 'packable' but with variety. You may know that I will watch out for the protein, milk, fruits and vegetables which Dr. Johnston wants the youngsters to have. And I'll be sure there are calories enough. Growing youngsters run off so many calories that they need a lot of food. I'll remember their sweet tooth and provide for that so they will not be tempted to patronize shops where cheap candy and poor cakes are sold. If you find that they tire of lettuce, give them chicory, endive, watercress or mint.

"Theoretically, each meal should have at least one hot dish. This is not always practical in fall and spring. So, maybe some of the menus I send will be all cold. And I'll stick in recipes for anything I think you may not know how to make."

Here are the menus I sent Margery the next week. Immediately following are those especially adapted to the fall school days.

Egg sandwiches on entire wheat bread
Raspberry jam sandwich on white bread
Apple and date salad, lettuce separate
Celery hearts
Bottle of milk in vacuum bottle
Grapes Spice cakes
Divinity fudge

. . .

Baked beans with tiny bit of chilli sauce or horseradish on entire wheat bread
Grated yellow cheese sandwich on white bread
Fresh tomato
Bottle of milk in vacuum bottle
Fresh peach Fig cookies
Butterscotch

. . .

Cream cheese and orange honey on white bread
Meat loaf on entire wheat bread
Carrot ball and beet ball salad, lettuce and dressing separate
Bottle of milk in vacuum bottle
Fresh pear Walnut bar
Mints

Tuna fish on white bread
Sliced ham on entire wheat bread
Potato salad, lettuce separate
Raw carrot strips
Bottle of milk in vacuum bottle
Plums Devil's Food Cake
Fruit roll

• • •

Pressed beef on entire wheat bread
Crushed pineapple and sliced banana on nut bread
Apple and celery salad, lettuce separate
Chocolate milk in vacuum bottle
Gingerbread
Marshmallows

• • •

These menus are well suited to the cold winter days.

Vegetable soup in vacuum bottle
Cream cheese and quince honey on white bread
Cornbread and bacon sandwich
Apple, celery and maraschino cherry salad, lettuce separate
Bottle of milk
Rice pudding with raisins
Peppermint candy

• • •

Old-fashioned bean soup in vacuum bottle
Pretzel sticks
Buttered cinnamon roll
Orange marmalade on entire wheat bread
Egg salad, lettuce separate
Bottle of chocolate milk
Baked apple with marshmallow top
Popcorn ball

• • •

Tomato soup in vacuum bottle
Cheese crackers
Hamburg on soft bun
Cranberry sauce
Date and walnuts on entire wheat bread
Jellied vegetable salad, lettuce and dressing separate
Bottle of milk
Banana
Fruit drops

• • •

Split pea soup in vacuum bottle
Dinner biscuit
Salmon on white bread
Fig and peanut on entire wheat bread
Grape and orange salad, lettuce and dressing separate
Bottle of milk
Jelly roll
Old-fashioned molasses candy

• • •

Vegetable soup made without stock in vacuum bottle
Soda crackers
Cottage cheese and apple butter on entire wheat bread
Egg and bacon on white bread
Coleslaw, lettuce separate
Bottle of chocolate milk
Diced mixed fruit Cup cake
Peanut brittle

I suggested these for the warmer spring days.

Chilled tomato juice in vacuum bottle
Cream cheese and orange marmalade on raisin bread
Minced lamb and mint jelly on entire wheat bread
Grated carrot and shredded cabbage salad, lettuce separate
Bottle of milk
Fresh pineapple Sugar cookies
Peanutbutter fudge

• • •

Minced ham on entire wheat bread
Sardines on white bread
Watercress, dressing separate
Bottle of milk
Baked custard Ginger cookies
Maple sugar

• • •

Sliced chicken on white bread
Peanutbutter and raisin on entire wheat bread
Apple and mint salad, lettuce separate
Radishes
Bottle of milk
Ambrosia Sponge cake
Stuffed dates

• • •

Chilled pineapple juice in vacuum bottle
Deviled eggs
Buttered entire wheat bread
Cream cheese on date nut bread
Beet and mint salad, lettuce separate
Bottle of milk
Sponge roll with lemon filling
Candied grapefruit peel

• • •

Bacon and tomato on white bread
Cold beef and current jelly on entire wheat bread
Grapefruit and celery salad, lettuce and separate dressing
Bottle of milk
Canned peach Oatmeal cookie
Fruit bar

• • •

These are the recipes I thought Margery might need.

PEANUTBUTTER AND RAISIN MIXTURE

Materials:

1 cupful peanutbutter
½ cupful finely chopped raisins
Warm water

Method:

Mix peanutbutter and raisins with enough warm water to make a thick paste.

VEGETABLE SOUP WITHOUT STOCK

Materials:

1 small carrot
½ medium sized turnip
2 stalks celery
2 medium sized potatoes
½ medium sized onion
1 quart water
5 tablespoonfuls butter
½ tablespoonful finely chopped parsley
Salt and pepper

Method:

Clean vegetables and cut in cubes of even size. Mix all except potatoes, and cook for ten minutes in

4 tablespoons butter, stirring constantly. Add potatoes, cover and cook for 2 minutes. Add water and boil one hour. Add remaining butter and parsley. Season to taste with salt and pepper.

Quince Honey

Materials:

5 pounds sugar
1 pint boiling water
5 large quinces

Method:

Add sugar to water. Stir over fire until sugar is dissolved. Pare and grate quinces. Add grated quince to sugar and water and cook fifteen or twenty minutes. Turn into glasses. When cold it should be about the color and consistency of honey. It is necessary to work very quickly with the quinces and to make this up in small lots if you want it at its best. The quince becomes discolored by exposure to air or over-cooking, and unless all operations are speedy the "honey" will be reddish instead of amber colored.

Date Nut Bread

Materials:

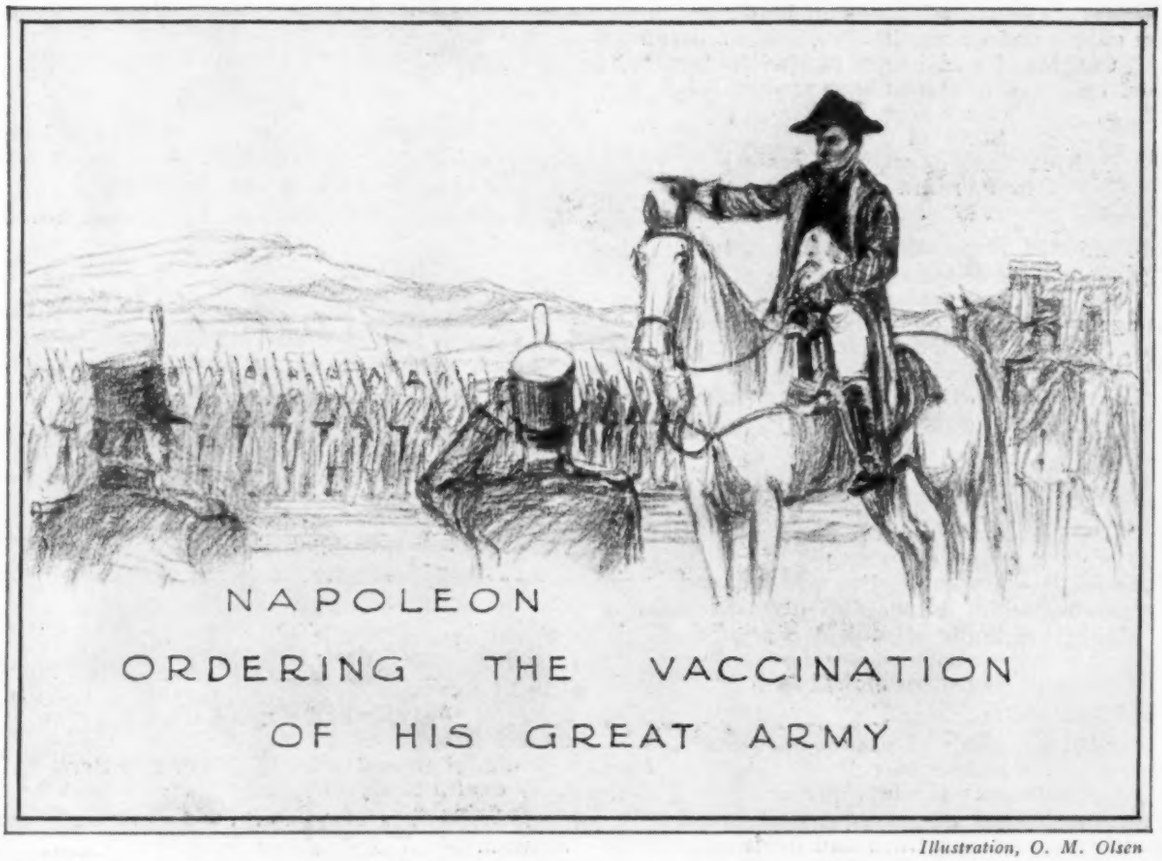
1 cupful chopped dates
1 teaspoonful soda
¾ cupful boiling water
1 tablespoonful butter
¾ cupful sugar
1 egg yolk
1 teaspoonful vanilla
Pinch of salt
1¾ cupful flour
½ cupful chopped walnut meats
1 egg white

Method:

Mix dates, soda and boiling water, and let stand at least twenty minutes. Mix butter, sugar, egg yolk, vanilla and salt. Add date mixture alternately with flour to the butter, sugar and egg mixture. Add nut meats. Beat egg white until stiff, and fold into other mixture. Bake in a loaf cake pan about forty-five minutes in a slow oven (300 F).

Curious Stories About Health

The Thirteenth of a Series by MELVIN PRICE ISAMINGER

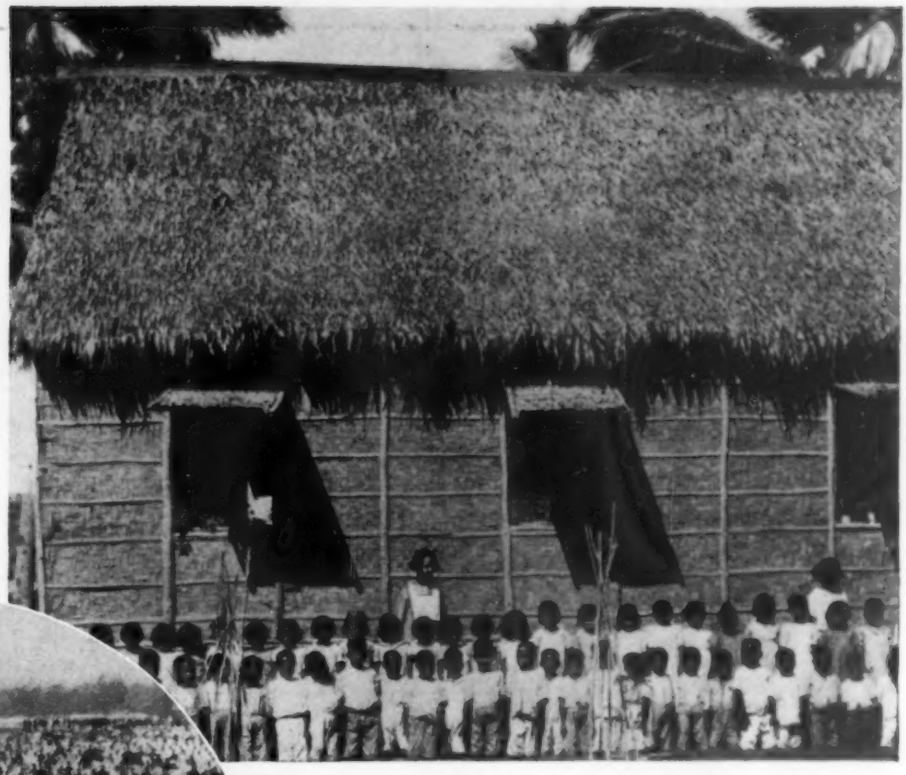


Illustration, O. M. Olsen

IN THE year 1805, Napoleon ordered his entire army vaccinated; only those who were known to have had smallpox were exempted from the emperor's mandate. The little Corsican was bent on victory, and victory over smallpox was a milestone toward victory on the battlefield. He knew that vaccination would drive the dreaded disease away.

Napoleon's faith in vaccination and in the man who made the discovery in 1796 was shown by an incident after the peace of Amiens between France and England. A petition requesting the release of certain Englishmen who were held prisoners of war was presented to the emperor. Napoleon intended to refuse until he was reminded that the petition was signed by Dr. Edward Jenner, discoverer of vaccination. The mighty little ruler is said to have replied, "Jenner, the discoverer of vaccination! Ah, we can refuse nothing of that man."

SCHOOLS Far Away



SCHOOLDAYS FOR THESE CHILDREN OF THE ISLAND OF GUAM ARE SPENT IN THIS PLEASANT THATCHED HOUSE.

GROUP GYMNASTICS ARE OCCUPYING THE SCHOOL CHILDREN OF PEIPING, CHINA, AT THIS TIME. NOTE EACH HAS A QUEUE.

SUCH IS THE "OPEN AIR SCHOOL" OF A PRIMARY GRADE IN RANGOON, BURMA. MUCH OF THEIR INSTRUCTION IS ON RELIGIOUS MATTERS.

Century Photos

THE PHYSICAL SUPERIORITY OF COLLEGE STUDENTS

By Harold S. Diehl

WHY SHOULD the American college woman be heavier than her off-campus sister at 16 and then stop gaining weight and allow the noncollege girl to surpass her in weight but not in height by 19? Why are college men taller and heavier than men not in college at the age of 16, and why do they, unlike their co-ed sisters, continue to hold their advantage in height and weight over men who do not enroll in college? And why are students in the large private colleges, generally speaking, superior physically to those in state universities, while the latter are better physical specimens on the average than those in small sectional colleges?

These are some of the things which have been discovered by accurate measurements and tabulations. From the same sources it is learned

also that today's college students are superior physically to college students of a generation ago and superior to the "normal" persons described in the tables of standards used by life insurance companies, which also were compiled almost a generation ago. All these facts afford pronounced evidences of change. Something worth knowing about is certainly under way. In fact, the figures suggest that this country may be slowly developing a superior physical type related in some way to intellectual superiority.

THE data for these studies consisted of age, height and weight measurements of 23,000 college men and 17,000 college women. Age was recorded as of the nearest birthday, and height and weight were measured without shoes or clothing or with the subject wearing only an examining gown of known weight. Records for men were received in approximately equal numbers from the universities of California, Cincinnati, Cornell, Minnesota, Princeton, Leland Stanford, Texas, Wisconsin, Yale and the College of the City of New York; while the records for women were from the universities of California, Minnesota, Leland Stanford, Texas, Wisconsin, Michigan State Teachers College, North Carolina College for Women and Smith College.

TABLE 1.—*Comparative Heights of Young American Men*

Age	College Men	Applicants for Life Insurance	Men in Citizens Military Training Camps	Army Recruits
16 years	67.48 inches	65.00 inches	66.92 inches	.....
17 years	68.39 inches	66.23 inches	67.40 inches	.....
18 years	68.72 inches	66.81 inches	67.79 inches	66.90 inches
19 years	68.82 inches	67.23 inches	68.07 inches	66.97 inches
20 years	68.79 inches	67.34 inches	68.10 inches	67.02 inches
21 years	68.77 inches	67.50 inches	68.16 inches	67.33 inches

Although a few of these students at the time of entering college were under 16 or over 21 years of age, only the measurements of those from 16 to 21 years are included in the study. Of the girls, 4 per cent are 16 years of age as compared to 2 per cent of the boys; and 21 per cent of the girls are 17 years of age as compared to 14 per cent of the boys. This apparently indicates that girls tend to enter college at a slightly younger age than boys.

The college men ranged from 4 feet 1 inch to 6 feet 10 inches in height and had an average height of 5 feet 9 inches. This is a significantly greater stature than that which has been reported for other men of the same age in our population; namely, army recruits, men in citizens' military training camps, and applicants for life insurance.

At 16 years of age (table 1) the college men are 2½ inches taller than applicants for life insurance; at 18 years of age they are almost 2 inches taller than applicants for life insurance and army recruits and approximately 1 inch taller than men in citizens' military training camps; and at 21 years the students are from 1¼ to 1½ inches taller than applicants for life insurance and army recruits, and ½ inch taller than the young men in citizens' military training camps.

Few data are available concerning the heights and weights of women in this country; in fact, the only figures with which it was possible to compare these measurements of college women were those collected by the life insurance companies and analyzed by the Medico-Acturial Society of America in 1912.

TABLE 2.—*Comparative Heights of Young American Women*

Age	College Women	Applicants for Life Insurance
16 years	63.82 inches	61.96 inches
17 years	63.69 inches	62.31 inches
18 years	63.69 inches	62.59 inches
19 years	63.86 inches	62.72 inches
20 years	63.85 inches	62.67 inches
21 years	63.74 inches	62.62 inches
All ages	63.75 inches	62.59 inches

A comparison of these data (table 2) shows that at 16 years of age the college women are 1¾ inches taller than the women of the life insurance group, and 1 inch taller at 18 and at 21 years of age.

Another notable difference between college students and other groups is that during childhood the college students have grown the more rapidly in both height and weight; as a result they attain full growth several years before any of the others. For example, college men have practically completed their growth in height by 18 years of age, while the men in the other groups continue to grow in height until at least 21 years of age. College women do not show any increase in either height or weight after 16 years, while women in life insurance groups increase in both height and weight until 19 years of age.

TABLE 3.—*Comparative Weights of Young American Men*

Age	College Men	Applicants for Life Insurance	Men in Citizens Military Training Camps	Army Recruits
16 years	133.70 lbs.	121.71 lbs.	128.09 lbs.	.....
17 years	138.16 lbs.	129.91 lbs.	130.79 lbs.	.....
18 years	141.09 lbs.	135.62 lbs.	134.39 lbs.	134.97 lbs.
19 years	142.45 lbs.	139.44 lbs.	137.71 lbs.	136.26 lbs.
20 years	144.05 lbs.	139.77 lbs.	139.85 lbs.	138.13 lbs.
21 years	144.87 lbs.	141.53 lbs.	140.87 lbs.	141.17 lbs.

TABLE 4.—*Comparative Weights of Young American Women*

Age	College Women	Applicants for Life Insurance
16 years	120.04 lbs.	115.03 lbs.
17 years	119.85 lbs.	120.12 lbs.
18 years	120.72 lbs.	122.09 lbs.
19 years	121.03 lbs.	124.86 lbs.
20 years	121.74 lbs.	124.11 lbs.
21 years	120.73 lbs.	123.54 lbs.

In weight as in height the college men exceed the young men of any of the other groups.

The differences in the weights of the groups are greatest at the younger ages; but even at 21 years of age the college men average more than 3 pounds heavier than the men of any of the other groups.

Philip D. Gendreau

College women, on the other hand, are heavier than the women of the life insurance group only at 16 years of age.

At 17 years of age the groups are of approximately equal weight; but from 18 to 21 years of age, college women fall progressively farther behind in weight. This change in relative weights occurs because the college women show no gain in weight from 16 to 21 years, while the women of the other group continue to gain in weight until 19 years of age. At this age, when both groups have ceased to gain in weight, the college women although taller are distinctly lighter than the women of the other group. Whether or not this is due to a biologic change or merely to the fact that in recent years it has become stylish to be thin is an interesting question, but one which is not answered by this study.

INTERESTING differences also were observed between the heights and weights of students in the various colleges and universities. The tallest college men in the ten colleges included in the study are in Princeton, Yale, Leland Stanford and California, and the heaviest men are in Leland Stanford, Yale, California and the University of Texas. Although some of the differences in height and weight between the students of certain institutions are small, Princeton men average 1 inch taller than the men of the University of Wisconsin and 2 inches taller than the men of the College of the City of New York; and the men of Leland Stanford average 5½ pounds heavier than the men of the University of Cincinnati and 4½ pounds heavier than the men of Cornell.

TABLE 5.—*Comparative Physiques of Men in Certain Colleges**

College	Height, Inches	College	Weight, Lbs.	College	Body Build†
1. Princeton	69.28	1. Stanford	144.36	1. College of City of New York	31.04
2. Yale	69.24	2. Yale	153.52	2. Wisconsin	30.45
3. Stanford	69.21	3. California	142.58	3. Stanford	31.14
4. California	69.05	4. Texas	142.36	4. Yale	29.94
5. Texas	69.01	5. Wisconsin	141.84	5. Minnesota	29.92
6. Minnesota	68.56	6. Princeton	141.55	6. California	29.90
7. Cincinnati	68.55	7. Minnesota	140.66	7. Texas	29.89
8. Cornell	68.48	8. Cornell	139.93	8. Cornell	29.84
9. Wisconsin	68.25	9. College of City of New York	139.42	9. Cincinnati	29.50
10. College of City of New York	67.02	10. Cincinnati	138.64	10. Princeton	29.49

* Students of 17, 18, 19 and 20 years of age with equal numbers from each age group.

† These indexes of body build have been computed from mean heights and weights. The smaller indexes indicate slighter builds.

Among college women similar differences exist. The young women of Leland Stanford and Smith are taller and heavier than women

of any of the other colleges studied. In height the women of Leland Stanford exceed those of Cornell and Michigan State Normal College by more than 1 inch, and the women of Smith and Leland Stanford average 6½ pounds heavier than the women of the North Carolina College for Women and almost 8 pounds heavier than the women of the University of Texas.

TABLE 6.—*Comparative Physiques of Women in Certain Colleges* *

College	Height, Inches	College	Weight, Lbs.	College	Body Build†
1. Stanford	64.37	1. Smith	123.87	1. Cornell	30.68
2. Smith	64.24	2. Stanford	123.79	2. Michigan State Normal	30.14
3. Wisconsin	63.95	3. Cornell	123.15	3. Minnesota	30.14
4. Texas	63.92	4. Minnesota	121.61	4. Smith	30.02
5. North Carolina College for Women	63.68	5. Wisconsin	121.25	5. Stanford	29.88
6. Minnesota	63.52	6. Michigan State Normal	119.97	6. Wisconsin	29.65
7. Cornell	63.36	7. North Carolina College for Women	117.29	7. North Carolina College for Women	28.92
8. Michigan State Normal	63.09	8. Texas	116.02	8. Texas	28.40

* Students of 17, 18, 19 and 20 years of age with equal numbers from each age group.
† These indexes of body build have been computed from mean heights and weights. The smaller indexes indicate slighter builds.

After growth in height has been completed by both the college men and the college women the men are 5 inches taller than the women.

At 16 years of age, however, the difference in the height of men and women is only about 3½ inches. This smaller difference at 16 years is due to the fact that the average college woman has attained her maximum growth in height by 16 years of age, while the college men

TABLE 7.—*Sex Differences in Heights and Weights of College Students*

Age	Height in Inches		Weight in Pounds	
	College Men	College Women	College Men	College Women
16 years	67.48	63.82	133.70	120.04
17 years	68.39	63.69	138.16	119.85
18 years	68.72	63.69	141.09	120.72
19 years	68.82	63.86	142.45	121.03
20 years	68.79	63.85	144.05	121.74
21 years	68.77	63.74	144.87	120.73
All ages	68.68	63.75	141.65	120.69

continue to grow in stature until between 18 and 19 years of age. This more rapid rate of growth by girls than by boys prior to the age of 16 is the result of what Boas calls the "postadolescent growth spurt," which reaches its peak between 11 and 12 years of age in girls and between 14 and 15 years of age in boys.

In weight as in height the college women show no gain from 16 to 21 years of age, the period covered by this study. On the other hand, college men show an annual increase in weight during the same age period. The difference in weight between the men and women at 16 years of age is 13 pounds, but by 21 years of age this difference has increased to 24 pounds.

In physique, college men and college women show two distinct differences from the men and women of the general population. One is that when growth is completed college men and college women are distinctly taller, and college men are also distinctly heavier than men or women of the general population. The other difference is that the college students, having been accelerated in growth during childhood, attain maximum growth at an earlier age than the rest of our population. The reasons for these differences between the groups are doubtless multiple and can be investigated only indirectly by a study of the selective processes which determine what boys and girls go to college. Of these selective factors the one most consciously and regularly applied is the estimation of intellectual capacity. Many qualified persons never go to college, but the vast majority of the general population would be eliminated from the college group by entrance requirements alone.

WHETHER or not selection on an intellectual basis produces a group which is also physically select is a question on which various studies have been made, but considerable difference of opinion still exists. In 1889 and 1892, Gratsianoff and Sack reported studies on Russian children which indicated that brighter children are taller and grow faster than dull ones. In 1893, Porter published his analysis of the measurements of 33,000 school children of St. Louis from which he concluded that precocious children are taller and heavier and dull children shorter and lighter than average. In more recent years similar studies have been made in London, Vienna, Chicago and Detroit, most of which also seem to indicate that brighter children are generally slightly taller and heavier than average children of the same age. Terman, in his study of the mental and physical traits of a thousand gifted children, reports that there is a tendency for mentally "gifted children" to be slightly superior in height and weight to a sampling of average children. In university students, Abernethy of Chicago, Heidbreder of Minnesota, and Garrett and Kellogg of Columbia find little if any correlation between physique and intelligence.

On the other hand, Davenport and Minogue conclude that "a correlation between physical and mental growth in children surely exists. It is most obvious when the two series are both long and show marked differences at the extremes. Thus a correlation will be found in a series comprising both feebleminded and superior children, when it may not be found in so highly selected and uniform a group as a lot of college students. The failures to find a correlation have occurred in reporting on too homogeneous or nondeveloping groups." Paterson, reviewing the subject in *(Continued on page 820)*

THE PLAY WAY to Health and Long Life

By Calvin T. Ryan

EIGHT hours for work; eight hours for sleep; eight hours for play. Mathematically that is the correct schedule for a long healthy life. But in actual living, most of us swerve from that ideal. Likewise there is much sickness, even premature death. And wherever there is sickness there is suffering, expense and inconvenience to all involved. No one is sick alone.

The amazing growth of medical science and the advancement in surgery are some of the blessings of modern life. But both have come about through necessity. The high tension under which the modern man lives requires attention to bodily repairs and should teach him to pay more attention to his manner of living. Unless the tension is released something is going to snap. All other animals play. The human species should be no exception. Children play. Their play life is their whole life under normal conditions. There is a need for carrying something of the play spirit into adulthood. Play is nature's means of relieving the tension.

We hear much about the hard work our grandfathers did. We hear occasionally of their passing the allotted three score years and ten. Certainly we hear a great deal about their "roughing it." They lived a hard life, yet they were apparently free from many modern disorders. Nor were their lives mathematically ordered. Nevertheless, they did have a way of caring for and protecting themselves.

In the sandhills of Nebraska, for instance, families of six or seven live in one room. The one room is their house, their home; moreover it is neither cool in summer nor hot in winter. The air is conditioned only by local circumstances. They disregard all ordinary laws of hygienic living, yet no physician thrives in their midst. Children are born and grow into healthy specimens of humanity in most unpromising surroundings. I mentioned this condition to a physician recently and asked him for an explanation. His answer was quick and to the point: "Nature is kind to them." At first I took his meaning to be that nature bestowed on those people its beneficence without exacting its usual pay. In reality what he meant was that nature killed off those who couldn't stand the life. Nature never coddles. It kills off those who cannot withstand the exacting laws which it lays down. That is what it does to cattle, hogs and all the lower animals. I suppose that is what it does to all the animal kingdom. Brutal, yes; but also kind.

Our grandfathers adapted themselves to the conditions under which they found themselves. They did work hard for they had very few labor saving devices; besides, there was much work to be done. Farmers, for instance, worked from sun to sun; but they did not rush about their work. They did not know the word, possibly, but they relaxed in their work. They worked oxen and mules, and they took on the tempo of the animals they worked. The work animals had to rest occasionally, and so did the workmen. They put in long hours, but they did not work at top speed as the modern man works in the factory or shop.

Our grandparents did play. They had their gatherings, their socials, their fish fries and their clam bakes, and whenever they went to these they went to play. And in their play life they took their time. There was never any hurry to get there, and there was less hurry in leaving.

Modern life has a different tempo. It is the tempo of the machine. We are constantly speeding up. Men in office and factory work under a tension. Their lives are measured out to them by the tick of a clock, during which time they must accomplish a certain amount of work. Rushing away from the place of employment, these men and women jump into their automobiles, or board the street car, the subway or the elevated, and rush to their homes. All is speed, rush, hurry. There is difficulty for the most composed ever to find relaxation.

THIS extra strain must be compensated for somewhere and at some time. Either nature is going to be kind to the human race and kill off those who cannot stand the pace, or else we shall have to learn better adaptation. The child sleeps when he is tired. Nature takes care of that. But the adult tries to cheat nature and cuts short the rest hours. We speak lightly of Americanitis and even laugh at those with "nerves"; but we cannot laugh at the statistics, especially those referring to the increased number of middle aged persons who are dying of heart disease.

We look about us and find men and women living at such a pace that one marvels even more at the good work the physicians and surgeons are doing to keep us up and running. Clinics and hospitals are kept busy, it is true, just as busy as filling stations and auto repair shops. Automobiles are built as nearly foolproof as they can be, but the maker of a machine cannot control the driver of that

machine. The human body, resembling the machinery of an automobile or even more remarkably a great laboratory, withstands much abuse and is subject to much repair. The body warns through pain and a general let-down of performance. The automobile bumps, chugs and coughs, then stops. Sooner or later our bodies will go the way of the lifeless machine. The great laboratory within us, the liver, the kidneys and the stomach, will eventually shut down. That time may come "like a thief in the night."

WE PAY for every step of progress we make. We call it civilization when we can make these human repairs through medicine and surgery; but I wonder whether we are not coming to rely too much on these repairs. Science is stressing prevention. We try to teach prevention of disease in our schools. We call it progress when we can speed up production, when we can get more work out of men; but shall we not pay for it by wearing out men? In schools we hear about speed tests. The child grows up with a fear of not being first. We progress here; but is the progress made worth the cost?

With so much amusement in the United States —it is now one of the major businesses—is it not strange that we are still spoken of and written about as a people who do not know how to play? We have commercialized recreation that does not recreate. We have sports for a few. We have playgrounds for our children; but they grow up without learning how to play.

IT IS THE high tension of modern life that is compelling men and women, young and old, to seek all sorts of amusement. They wear themselves out hunting for it. Only a minority make these amusements serve them. The majority serve the amusements.

Finding fault with modern amusements is a futile pastime. Disapproving of how the other fellow answers the call of nature to play is equally futile. Here is a surgeon who plays golf, goes to ball games, enjoys watching a boxing match and sneaks out occasionally for a fishing trip. None of those experiences appeals to me. In fact they would all bore me. But that surgeon answers the play call of nature in his particular fashion. It keeps his hand steady, his brain clear and his poise perfect. I shall not condemn him.

Here is a college professor who spends all spare hours in season working in his flower and truck garden. Here is another who takes his

THIS COLLEGE PROFESSOR FINDS HIS RELAXATION IN SPENDING SPARE HOURS DURING SEASON IN HIS FLOWER AND TRUCK GARDEN.

dog and goes for a tramp across the hills and woods. A minister, a sedate, reserved, superannuated old gentleman, rides his bicycle daily. These may be odd things for these particular men to do, but they are getting away from their work, giving themselves a chance to relax. They are playing their way into good health and long life.

A once famous football coach told a luncheon club that every person should learn at least one outdoor game that he could play all his life. The coach had had the usual Puritan attitude toward play sublimated. The trouble with many of us is that we are still Puritans. Play is trivial, childlike and for some even sinful. We think serious-minded persons do not play; whereas, in reality, it is the more serious-minded who do play. Moreover, they take their play life seriously.

The eighteenth century school advertised that its "scholars" were not permitted to play. One school ran an advertisement with the following copy: "We have no holiday." That saintly old Methodist, John Wesley, said with reference to children that if we allow them to play while little they will play when they grow up. Too bad!

We have the two extremes: the football coach with his belief in play; the Puritan with his thought of play as a kind of original sin. For modern life, and for at least a happy existence on earth, we are beginning to believe that the play way is the healthy way.

When I went to school my work was *work*. No one thought of making it play. No one thought of making it interesting. Now that my child is in school her work is *play*. She learns by *playing*.

PERHAPS some of us who were nurtured and admonished in the olden days think that too much of the play spirit and not enough of the work spirit carries over into secondary school and college or into life. True we haven't yet learned how to make the proper adjustment; at least we haven't learned how to teach this adjustment to boys and girls in school and college. Waterloo, we are told, was won on the playgrounds of England. May we not hope that in the promulgation of international good will and permanent peace the playgrounds of the world will have their place? I believe they will.

With all our educational progress, we have not yet learned to put first things first. We teach the children to wash their teeth regularly, and that is fine. We teach them to take frequent baths, and that is well. We talk to them about milk and vegetables, and occasionally a child will eat carrots with a vengence for a whole week. These are splendid beginnings, but somehow we have not learned to make the children health conscious. That larger attitude of putting health above all things we fail to get across. Even in our colleges and universities we are still in the corrective stage, wherever we are anywhere.

Why is it not possible to begin by a more positive stress on health? Why not the play way? We teach the child reading through the play way, through appealing to his curiosity and his interest. Can't we do something of the kind in teaching him permanent habits of health? The core subject of the curriculum should be health.

THE patient was an exhausted, emaciated, middle aged college professor. He had reached the end of his ropes and had gone in for repairs. He had to have an operation. Having recovered from that, he had to be treated for chronic conditions. I listened in on the physician's prescription. First, he told the learned doctor something of the makeup of the human body. Then he told him what that delicate and fearfully and wonderfully made body needed to keep it in running condition. For bare existence it didn't need much attention for a while; but to keep it at high speed it had to be looked after. The learned doctor listened most meekly, but when the physician appealed to his proclaimed knowledge of the world and all its books, he began to squirm. "Throw away the books. Don't take life so seriously. Take play more seriously. You must learn to play."

The stress on "learn" was obvious. The professor had never played in his life. He didn't know how to play a single outdoor game. He was bored by most sports. He cared nothing for fishing. So, in truth, he had to "learn" to play. "You have depended too much on medicines. You have gone on temporary repairs," the physician told him. "Now you are up against it. You are in middle life. You should be at the height of your career. Look at you! Broken and worn; literally cast out of your profession." Again the professor squirmed. The physician seemed delighted with his effects. "Throw away your hat and eventually your shirt. Get out and wallow in the dirt. Trust more to Mother Earth and the glorious sun, and live as a man of your intelligence should. I have only this further advice: You must eat regularly and abundantly; you must sleep fully eight hours, and *you must learn to play!*"

That is the lesson for modern life. Sooner or later we shall all have to take that advice or perish. Let us hope that we can do more in our schools and colleges to build up this attitude. There is no hope that the tempo of modern life will slow down. We shall have to adapt ourselves to modern life, and one way is to answer nature's command to play more. We may not be able to live mathematically (8-8-8), but we can make a better adaptation of the three essentials for a long and healthy life.

LEPTOSPIRA ICTEROHAEMORRHAGICA
-THE GERMS OF YELLOW FEVER-
DR REED AND HIS COMMISSION DEMONSTRATED THAT THE MOSQUITO STEGOMYIA FASCIATA WAS ALONE RESPONSIBLE FOR THE TRANSMISSION OF THE ABOVE GERMS FROM ONE PERSON TO ANOTHER, AND THAT THE DISEASE COULD BE CONTRACTED IN NO OTHER WAY. BUT IT DEVOLVED ON DR. GORGAS TO ELIMINATE THIS DREAD PEST FROM HAVANA AND TO MAKE THE TROPICS SAFE FOR THE WHITE MAN. THROUGH DR. GORGAS PREVENTIVE MEDICINE CAME TO A NEW EPOCH.
-STEGOMYIA FASCIATA- FEMALE MOSQUITO, VECTOR OF THE GERMS OF YELLOW FEVER.
LARVA OF THE MOSQUITO OF YELLOW FEVER BELOW SURFACE OF WATER
DR WALTER REED PROVED THAT THE ABOVE MOSQUITO MUST BITE A YELLOW FEVER PATIENT IN THE FIRST THREE DAYS OF HIS ILLNESS IN ORDER TO TRANSMIT THE DISEASE, AND THAT A PERIOD OF TWELVE DAYS OR MORE MUST ELAPSE BEFORE IT CAN TRANSMIT THE DISEASE TO ANOTHER
ATLANTIC OCEAN
CARIBBEAN SEA
PANAMA
PANAMA CANAL
BOUNDARY LINE
CANAL ZONE
BAY OF PANAMA
PACIFIC OCEAN
- THE PANAMA CANAL ZONE -
PRIOR TO GORGAS THE ISTHMUS OF PANAMA WAS A DEADLY PLACE. YELLOW FEVER AND OTHER DISEASES SWEPT MEN INTO THE GRAVE BY THE HUNDREDS. DR. GORGAS DRAINED ALL THE SWAMPS, OILED THE MOSQUITO-BREEDING POOLS, SCREENED THE HOUSES AND MADE THE DISTRICT A SAFE PLACE IN WHICH TO LIVE AND WORK. IN 1913 THE WATERS OF THE ATLANTIC AND THE PACIFIC WERE UNITED. THE GRAND DREAM WAS REALIZED
ADOLPH BEILIN

WILLIAM CRAWFORD GORGAS

(1854 - 1920)

A Brief Biography of the Liberator of the Tropics

By ADOLPH BEILIN

FEW MEDICAL MEN of genius have come into the world at a more opportune time than did William Crawford Gorgas. The son of a Confederate soldier, Gorgas was born in Mobile, Alabama, on Oct. 3, 1854. In his early boyhood he attended a private school in Richmond, Virginia, and later continued his education at the University of South, Sewanee, Tennessee. Next he pursued his studies at the Bellevue Hospital Medical College in New York, graduating with the degree of M.D. in 1879. Soon afterward he joined the Medical Corps of the U. S. Army, in which service he rose to the rank of Surgeon General during the World War. In 1898 he was chosen to lead the fight against yellow fever on the Isthmus of Panama.

ON THE completion of his work there he undertook a series of investigations of an epidemic form of pneumonia among the miners in South Africa for the British Government, and of yellow fever for the Rockefeller Foundation in South America. At his death in London in 1920 the British Government conducted his funeral services with all the ceremony accorded a great scientist. His interment with highest military honors took place at Arlington. But the glory of Gorgas was that of a savior, not a destroyer of life. Although in the service of the army, his triumphs were not in the cause of war but the realms of peace. He fought disease, not men. In the highest and noblest sense, he was a great warrior and a great liberator, and his greatness is destined to grow with the passing of the years.

IT WAS in Panama that Gorgas reached the pinnacle of fame because of the marvelous way in which he accomplished what had hitherto seemed to be an impossibility. The scourge of the tropics more than any other cause served to defeat the French in their attempts to construct the canal. The French found the Isthmus a veritable death trap, and they nicknamed Panama "the white man's grave." During the nine years of their occupancy they lost 22,819

workers from disease. Not only did Gorgas eradicate yellow fever and other diseases of the tropics, but he formed an organization of the highest efficiency, which in a short time made possible one of the greatest engineering feats ever carried to completion. Without the genius of Gorgas there would be no Panama Canal. Walter Reed and his commission having proved that the mosquito Stegomyia fasciata was responsible for the transmission and spread of yellow fever, it was left to Dr. Gorgas to rid Havana of this deadly pest. A day came in 1901 when there was not a single case of yellow fever in Havana for the first time in its history. There is no story in the whole range of preventive medicine so astonishingly interesting as is the story of the eradication of yellow fever from the Western Hemisphere. The magnitude of the debt which humanity owes to Gorgas can never be fully estimated.

No conquest of science seems more wonderful in its simplicity or more profound in its significance than the discovery that the glands at the base of a mosquito's bill can become diseased and harbor a microscopic parasite which will make of an otherwise annoying but harmless insect one of the most dangerous creatures alive. But still more amazing is the achievement of the man who rid Havana of this unwitting carrier of death and thereby transformed the pest hole of the tropics into a health resort.

UNDULANT FEVER

(Continued from page 783)

malaria, even though the malarial parasites are not found and the disease fails to respond to quinine treatment. Others resemble typhoid; others are indistinguishable from acute rheumatic fever. There are instances on record in which acute abdominal pain has led to unwarranted operation. In rare instances it has been known to cause meningitis or even to invade the substance of the brain itself and cause paralyses of various sorts. The organisms have been known to cause abscesses in the ribs and spine; and actual swelling of certain joints has been reported.

Particularly is undulant fever likely to be mistaken for tuberculosis. Indeed, many symptoms of the two diseases are the same, as can be seen from the foregoing outline. Night sweats, weakness, loss of weight, moderate anemia, even the blood counts are likely to be the same in the two diseases. In about a third of the cases of undulant fever an associated bronchitis with hacking cough is present; and this feature is particularly liable to be confusing to the diagnostician.

From what has been said it is obvious that the diagnosis of this disease is not easy. Indeed, in undulant fever, more than in any other disease, the exceptions are more important than the rules, and the diagnostic acumen of the physician is often sorely tried in arriving at a correct solution of the patient's difficulties. Likewise, the dangers incident to attempts at self diagnosis are apparent.

Final diagnosis must depend on the use of the microscope and test tube. Here is one disease in which no amount of clinical skill is sufficient to make a diagnosis. The physician can merely suspect the presence of the disease; proof must come from the laboratory.

As the disease has been studied in greater detail it has been found that there are numerous points of difference between the disease derived from cattle or swine and the true undulant fever derived from goats. "Goat fever" seems to be a much more acute type of disease than is the case of the cattle type of infection; moreover, the temperature does not show the wavelike variations typical of the true Malta fever. Infection which may be traced to the swine type of germ seems to approach the goat variety in severity; while the cattle germ produces, on the average, a relatively mild disease in man.

Human beings seem to a large extent to be immune to infection with the bovine type, and of the many who undoubtedly are exposed to the infection by virtue of drinking infected milk, relatively few contract the disease.

The acute stage of the disease, in which fever is a prominent symptom, may represent the entire illness; but in other instances it may be only the beginning of a chronic, protracted period of disability lasting for months or years. Such patients may present a multitude of vague, indefinite complaints, too numerous to mention here; and the very indefiniteness of their symptoms may mislead their physicians into thinking that their complaints are groundless. Surveys and clinical studies are now being conducted in various parts of the country to determine just what percentage of these cases is caused by this type of infection. Preliminary work indicates that the disease is much more widespread than physicians realize at the present time. It remains for future study to determine the actual incidence of the disease.

The first cases reported occurred among veterinarians, farmers, *(Continued on page 860)*

THE ARTIST, ERNEST R. NORLING, ADDS FINISHING TOUCHES TO HIS PORTRAIT OF THE PIONEER, DR. MARCUS WHITMAN, WHICH WAS PRESENTED TO THE AMERICAN MEDICAL ASSOCIATION AT THE CENTENNIAL, AUG. 13-16.

TWENTIETH CENTURY PAPOOSES SEE THE COUNTRY FROM THEIR OBSERVATION PLATFORMS. WE WONDER WHICH OF THE TRAINS WILL GIVE THE LONGER RIDE.

Barlow

Planet News Ltd.

DEAF AND DUMB ATHLETES PARTICIPATE IN THE TRACK MEETS AT LONDON, ENGLAND; THEY ARE STARTED WITH THE PISTOL, NOT BY THE SOUND, BUT RATHER BY THE FLASH.

THE FISHING BOATS OF THESE INHABITANTS OF QUAINT GANDRIA, NEAR LUGANO, IN SOUTHERN SWITZERLAND ARE CONSIDERED "PICTURESQUE" BY TRAVELERS.

H. Ruedi.

HOME STUDY

By J. F. Rogers

ASSIGNMENTS SHOULD BE MADE ACCORDING TO THE INDIVIDUAL'S CAPACITY AND NEEDS.

Ewing Galloway

HOME STUDY is "the big, bad wolf of education." It is "vicious, useless, unnecessary and stupid." "Nothing in the home causes more trouble than home work. It even causes divorces. It adds to the nervousness of children, it brings about deceit, it helps to make liars." So say three educational writers. In the *New York Times* (April 4, 1935) appeared the following words of one parent whose experience and the experience of whose child seem not uncommon:

The average assignment for a girl of 14 in her first year of high school is practically a day's work for an adult. Teachers have no qualms about piling on the home work for their particular subject, not seeming to realize that each subject-teacher does the same thing and that by the end of the school day the student's work has just begun. Here is an example of a day's assignment:

Read a Shakespeare play and make a play report; condense it into a synopsis. (In order to get a good rating for neatness it must be typewritten). Write an account of your author's life and works—interesting incidents, and give your opinion on it.

In Biology.—Describe all labels which the teacher puts on the blackboard regarding certain insects; study these with encyclopedia and dictionary.

Study and review for an algebra test.

Study a given list of French verbs.

Have "career-book" written up to date (typewritten) and paste in three pages of current events culled from daily newspapers and periodicals. For this same "career-book" the student must locate a magazine article describing the work done by some outstanding person engaged in the same type of work she expects to follow and plan a discussion of this.

Write a composition on "Why Obey Rules and Regulations?" (Typewritten preferred).

For the "March of Time" take five current events and comment on them.

From about 4 o'clock, when the child arrives home she is kept busy until dinner time, after which she holds forth until 11 or 12 o'clock at night and sometimes has to get up at 7 in the morning. This home work is indirectly responsible for more undernourished, nervous, bespectacled, round-shouldered children than you could possibly imagine.

Home study is cussed and discussed perennially. It was forbidden by law, for children under 15, in California in 1901. This legal act

was revoked in 1917, but Los Angeles has recently abolished home work in the first eight grades and in the remaining grades, "over the week end."

At least a hundred articles on this subject have appeared in journals of education in the past twenty-five years and easily a thousand in the secular press. In these are found the following pros and cons:

Pros	Cons
Home study results in:	Home study results in:
Self reliance	Reliance on others
Thoroughness	Waste of time
Independence	Cheating
Responsibility	Deceit
Honesty	Lying
Neatness	Slovenly work
Habits of study	Nervousness
Accuracy	Loss of sleep
Obedience	Injury to mind and body
Home study keeps children at home	Home study leaves pupil
Improves home	No time for play
Cultivates "quiet reading and profitable thought"	No time "to loaf and invite his soul"
Cultivates love of home	No time for music, art, clubs
Makes less work for teachers	No time for home duties and pleasures
Saves money of taxpayer	Makes work for parents
Home is best place to study	Makes worry for parents
	Home is a poor place to study

From the mere mixing of the above "fors" and "againsts" we get only a disturbance in the test tube, a bubbling, accompanied by heat but with little light. We get no solution. On the one side we have a list of good habits and a serene home atmosphere, together with a saving of public funds, and on the other, a series of bad habits and parental troubles and apparently worse than a waste of time. However, on the settling of the mixture one item from the left column and one from the right are certainly evident. One affects all concerned: "Home study keeps children at home." The other affects all too many children who ought not to be affected: "Home study results in worry and loss of sleep." On setting aside the mixture for a time, one begins to suspect that certain conditions were present in the production of cons which were not strongly active in shaping the pros. Certainly we cannot escape here as elsewhere the relations of cause and effect.

Just how one educator should know that home work develops the laudable habits of study and traits of character that he lists or how another should be positive that it produces the undesirable qualities that he records is somewhat mystifying. How can either of these teachers be certain that the outcomes mentioned are the mere result of home work? The human subject is too complicated for such simple conclusions, and home work also is not always the same in content or extent. Besides, no teacher would want to be understood as believing that all his pupils could be made accurate and honest by home work or that they could all be rendered slovenly or cheats. Not all children are made home lovers by home study, nor are all made ill thereby. Moreover, some children are by nature studious, and some are not. Some learn easily and quickly, some with difficulty and slowly.

It must be evident, however, that unless teachers are altogether wrong in their impressions, undesirable traits in the child are sometimes brought to the surface and intensified by home study, and surely this is the last thing that education should do. There are enough situations in life that will bring out innate tendencies to undesirable conduct without creating such conditions in connection with the school.

The subject does not lend itself to intimate study except in one's own family, and most statements concerning its outcome are impressionistic or ex cathedra. There have been, however, a few attempts at a systematic study of the reactions of pupils, of parents and of teachers. That such investigations have been made is in itself a confession that home study is not always a blessing and is not always productive of the desired results.

In 1916 the New York Academy of Public Education questioned 1,174 teachers, principals and superintendents as to whether home work was to be recommended for elementary pupils. Of the 616 replies received 564 were in the affirmative. By way of reasons for this answer 331 (about 1 in 3) mentioned the development of self reliance; 226 (about 1 in 5) neatness, 176 (about 1 in 8) accuracy, 50 (about 1 in 20) honesty, and 40 (about 1 in 30) obedience. If the home work was carried out, of course, the child might be considered obedient, and one would expect at least 1 in 20 children to be honest with or without home work. These "reasons for" seem worthless. Some of the reasons given by teachers voting against home work were: "Pupils are fatigued because rest and recreation are reduced; it tends to careless work; pupils do not do their own work; work is done by those who need it least; conditions for study are unfavorable, and there is discrimination against the child with suitable conditions." All these conclusions apply, but by no means to all pupils.

Home work in all grades was favored by 364, or about one-third, and 427 favored fixing the definite time for home work at 60 minutes in 7A, 64 minutes in 7B, 94 minutes in 8A and 100 minutes in 8B. Doubtless these figures represent the average of opinions.

As alternatives for home study the lengthening of the school day, with study periods for which teachers would be paid extra, and the use of public library study rooms with teacher

Century Photos

IT IS BELIEVED THAT ONLY WORK DONE WITHOUT THE AID OF PARENTS CAN BE OF ANY BENEFIT.

supervision were proposed. The committee finally decided to recommend home work, with the stipulations that it should not be compulsory below the fourth grade and that it should not exceed an hour and a half in the highest grade, the eighth.

In 1929 the Association of District Superintendents of New York City appointed a committee to review this work. This more recent committee formulated recommendations for elementary principals, from which I quote the following:

Compulsory home work should be prohibited for children below the fourth school year.

For pupils in seventh-year classes, the maximum time for home lessons should be one hour. In eighth-year classes it should be one hour and a half.

No home work should be permitted unless adequate explanation has been given in school by the teacher.

Quality, not quantity, should be the standard of efficiency in judging the results of home work.

Principals should control the specialists in departmental work and prevent the demand for the preparation of too elaborate notebooks, drawings, maps, or essays.

In every school some uniform plan should be adopted to regulate the general plan of home study, and throughout all grades teachers should be directed in the use of the study period where such period is utilized.

In Racine, Wis., the parents of pupils of a junior high school were questioned concerning the amount of home work done by their children. This varied from none in the case of 8 per cent of pupils to over ten hours a week by 18 per cent. Five hours were expected; 403 parents thought this too little and 144, too much. Four hundred and forty reported that the health of their children was unaffected and 101 that their health was injured.

The principal comments:

A close correlation was observed between the high rank of students and the amount of home study done; almost without exception, the better ranking students reported hours of home work well above the average of five hours per week; on the other hand, the habitual borderline pupils too often reported little or no home study. Effort and achievement usually appeared upon the same report.

Individual differences are nowhere more apparent than in the various interpretations that may be read into the same assignment; to the overconscientious pupil the most detailed, often implied, activities are a part of the given assignment; to the less industrious child only the barest essentials are regarded as the true assignment. These facts should prompt the teacher to observe carefully the two possible extremes in the interpretation of the given assignment. In several cases in which complaint was made against too much home work, we found that it came from parents whose children, like good workmen, had attempted to do much more than was really called for in the regular assignment.

Home work seems, in the present day, part and parcel with the high school, and one argument advanced for its practice in elementary schools is that this prepares for such work later. If a certain amount of preparation of lessons must be made and there is no time in the school session, then home study would seem to be imperative. An investigation was made by the principal of the Cheyenne High School from which he decided that insufficient time spent goes with 54 per cent of failures in one study and with 65 per cent of failures in two subjects. Possibly he does not take into account that those who excel in school work usually study least and that one cannot overcome lack of mental ability by any amount of effort.

An experiment with two classes in algebra in the University of Chicago High School by E. R. Breslich seemed to produce the following results: Section A, which was assigned the usual home work but with no previous supervised study responded to a test with an average mark of 62.8, while Section B which had been taught how to study but given no home work averaged 65.5. (In the final examinations of the preceding semester the average grades of the two sections were A, 81.4 and B, 79.4.) The following chapter in the algebra was covered in six lessons. For these lessons, Section A worked under supervision, and Section B did home work. In the following test the average grade of the A's was 77.5 and of the B's, 86.4. According to the investigator, "the power obtained by section B

in the preceding chapter, while working under supervision, persisted and was strong enough to be helpful in the following chapter." Possibly this was the case, but the marks achieved in the second test seem to argue for home study or at least for well directed home study. The element of rivalry may also have entered into the experiment. The method of supervised study used in his school was as follows: "The teacher passed from desk to desk, watched the pupils at work, and made suggestions but rarely answered a question directly. The student was led to answer his own question. Only after it had become evident that the pupil had made a serious attempt were further suggestions given. Mistakes were always made the basis of a little further discussion."

EISNER of the mathematics department of the Manual Training High School in New York obtained the students' point of view by questioning 286 seniors. He learned that the average time spent in home work was from no time to six hours a day, usually from two to three hours with a median of two and one-half hours. One hundred and one of the students had found the assignments in mathematics excessive; 72, those in history; 48, those in economics, and 46, those in French. Two-thirds considered the total assignments too much; 9 per cent found them too hard, and 16 per cent felt that they were both too long and too difficult. More than half the students thought home the best place to study; 20 per cent, the study hall, and 20 per cent, the subject class. Fifty-five per cent thought the home work should be reduced; 32 per cent found it the right amount; 3 per cent would have it increased, and 13 per cent thought it should be eliminated.

Hall of the University of Virginia questioned 1,731 grade pupils as to whether they did better work at home or in school; 555 favored the school and 1,176 the home. Of 1,010 high school students, 750 preferred their home and 250 the school as the place to study. In the grades, 156 pupils voted for a longer school day instead of home work and in high school, 131.

Home conditions are not always conducive to study, and doubtless many students who vote against home work do so from this cause. F. J. Clayton of Concord, N. H., who attempted a statistical study found that 98 per cent of his students were furnished a good light but that only 75 per cent had a quiet place in which to work.

OURS is not the only country in which pupils and parents are troubled with the problem of home work. The Berlin correspondent of *The Journal of the American Medical Association*

CHEWING THE PENCIL IS UNHYGIENIC, BUT IT SEEMS TO HELP CLARIFY THIS YOUNG MAN'S ASSIGNMENTS.

Ewing Galloway

wrote in 1932 that the overburdening of the school child is "still a subject of much discussion. There are three factors that constantly cause complaint: home work, the long recitation periods, and extracurricular activities. Frequently the child is overtaxed beyond the point of recovery." The Minister of Instruction of France has appointed a commission to study the matter of "overpressure," which always implies too much home study. A similar investigation has been conducted in New Zealand with the discovery that 65 per cent of high school girls average three hours or more of study nightly. The report of the school medical officer of the London County Council for 1929 devotes two pages to the "question of overpressure," and five physicians are quoted as finding many cases of nervousness and debility due to excessive home work. One physician remarks: "To my mind it is not a good practice to set home work for a class as a whole. Pupils do not work at the same rate at school, why should they at home?" The chief medical officer concludes: "It is clear that school authorities who take it upon themselves to set work which is not done under their immediate supervision take upon themselves a very heavy responsibility. It is their duty to consider the result not merely upon scholastic advancement but upon health and physique in every individual case, and in every individual case it is their duty to insure that in every 24 hours, there is not only time for work, for meals, for physical exercise and for sufficient sleep, but also healthful relaxation and recreation."

In the *London Times* (educational supplement, April 12, 1930) a correspondent from the Irish Free State expresses the thoughts of thousands of American parents when he says, on the subject of home study in secondary schools, "The question gets little or no consideration from teachers as a body. It gets plenty of unwilling consideration from parents but their approval or disapproval hardly counts. . . . As things are, much of the work absurdly called preparation is by parents and children in cooperation, and the competition of pupils becomes more or less of a sham. The writer knows of a teacher who, though he assigns home work as others do, gives marks only for work done in class. He knows that home work well done is as likely to be due to energetic parents as to hard-working youngsters. He is, however, exceptional, and outside mathematics and perhaps science, it is doubtful whether his method could be applied to the marking of pupils' work. . . . A problem may keep a youngster busy for an hour and yet remain unsolved at the end of the time, while the same problem may be solved *(Continued on page 848)*

P. S. We want to add a postscript to this issue in the form of a short note about the October number of HYGEIA. We think there are going to be some stellar articles in it that you may especially want to know about.

For example, among them is an article that treats a subject vital to a constantly increasing number of persons. "The Selling of Glasses" by James E. Lebensohn shows how we as buyers have foisted on us various grades of material represented as first class. Learn how to distinguish the difference.

Dr. Logan Clendening, renowned author and lecturer, will begin a series of articles entitled, "The Doctor Abroad," and will personally escort you through Egypt, Italy, France and Holland. Don't miss the boat.

Ellen Sherrick delivers a poignant warning in her manuscript "It Never Should Have Happened" to all those persons who would neglect their bodies' warnings as well as their doctors' prescriptions. She escorts us through a hospital where innumerable patients are enduring torturous pain all because they neglected to take the necessary precautions.

"Enough to Tempt the Goblins" is the article that strikes the Hallowe'en keynote for the magazine. Miss E. M. Geraghty contributes more of her tempting menus and a Hallowe'en party is planned for three separate age groups.

A last note to mothers: Have you noticed recently whether your baby's head is entirely symmetrical? If it isn't, don't become alarmed, because David Greene's article on "Molding Your Baby's Head" will tell you the facts. Be sure you read the excellent advice he gives you.

This is an important issue, don't miss it.

The Editor

The Passing of Disease

By C. HILTON RICE

I STOPPED at the city laboratory and inquired about a diphtheria culture I had left there the day before.

"It's negative, Doctor," announced the bacteriologist, a veteran of more than twenty years. "I'm not seeing many 'dip' germs these days."

I remember that I had not seen a case of diphtheria for several months. Another disease I was trained to treat is on its way to oblivion.

I look back more than thirty years to student days: There is a rigid quarantine and grave alarm. In the corridors of the medical college we gather in groups and whisper. Upstairs on the third floor the museum has been converted into an isolation ward. Thirteen students lie stricken with smallpox. Three of them died, and the others came out marked for life. It has been ten years since I saw a case of smallpox.

A classmate of mine in medical college was in poor health, and a suspicious pallor developed. He consulted one of the teachers of internal medicine, who advised a blood examination. The report pronounced his death sentence in two words, pernicious anemia—an utterly baffling malady of the blood with curious periods of remission as inexplicable as the disease itself.

For a few weeks the boy remained about college; then he went home, returned in a few months looking better and went home again. We saw him no more. I used to walk with him sometimes down the street past a butcher shop where liver was sold, or given away, for dog meat. A miraculous remedy, cheap and abundant, right there at hand; yet nearly thirty years passed before Drs. Minot and Murphy, having noted Whipple's experiments on dogs, suggested to a doomed patient that he eat liver.

It seems so long ago, the typhoid of my intern days and first years of practice. The slow fever that we starved until the patient was consumed to a skeleton; the muttering delirium and ceaseless picking at dry lips; and those fearful hemorrhages and intestinal perforations. Those long pages I poured over as a student are gone from the textbooks, and all that need be known of typhoid is said in a few paragraphs.

And that other plague that ravaged some sections of the South. How remote they seem now, the names I used to say: intermittent and remittent, quartian, tertian, quotidian, hemorrhagic and comatose. Technical knowledge I once had is gone for I no longer need it. The board of health took over the problem of prevention, and I have not seen a case of malaria in several years. The pumpkin-skinned child with the swollen spleen no longer sits on the doorstep watching other children play.

In my intern days at the hospital one of the nurses was ill from a "slow fever" from some mysterious cause. I had made blood tests for typhoid and malaria, and both were negative. My chief, eager to tackle any problem that might be solved in the laboratory, asked to see a blood smear. His trained eye caught immediately what I had not observed because I was looking for the malaria plasmodium in red blood cells and was not seeing the whole picture.

"Ye gods!" he exclaimed. "Look at this white cell picture! I've never seen such an increase in the eosinophiles."

"What does that mean?"

"It's usually observed in infections with intestinal parasites."

The chief was on the right track. The discovery of the hookworm had not long been announced, and we soon had the villain. The next day, for the first time, we both looked down on the microscopic eggs of the tiny blood-sucker that was sapping the strength of hundreds of thousands of our people. Within a few weeks a thin, anemic girl from the country had bloomed into a red-cheeked, vigorous woman. Later I saw many of those pasty, lethargic victims who picked clay or mortar from the chimney to satisfy the mineral crave of an impoverished blood.

I HAVE seen but two of these severe infections in the past five years, and it seems incredible, as I write this that a major plague should have been discovered and started on its way to extinction before my very eyes.

Not many months after I had left the hospital in which I had served my internship, its wards were given over to the care of victims of yellow fever. But the ancient pestilence, before which the populace once fled in terror, was blocked, cornered and extinguished.

Later the dread bubonic plague gained entrance into the seaport, only to be recognized promptly and eradicated.

I am back again in the pre-vitamin era, teaching in the children's wards and clinics of a great hospital. Rows of little white beds, and here and there alert, anxious eyes staring from skeleton faces—malnutrition and maramus, a wasting and perishing, we knew not why.

And what a pathologic parade in the outpatient clinics! Gross deformities of rickets; tuberculous glands and bones; dysenteries and

toxic diarrheas; skin rashes, boils and festered sores; little mouths, coated with the thrush fungus, nibbling at fly-specked nipples on bottles of sour milk. And always in corridor and waiting room that plaintive, kitten whine of withered babes.

The great child welfare movement got under way. As a member of the New Orleans Pure Milk Commission, I went out to inspect a dairy. We had four certified dairies and were in urgent need of more. At the end of a car line I got off and walked a quarter of a mile up the railroad track to the dairy. The cows were standing ankle deep in filthy mud, and the strong odor of ammonia pervaded the air. Flies swarmed about, and a hole gaped in the screen door of the milk room. The dairyman was willing but stupid. Disconsolately I walked back down the railroad track.

I had not much faith in man then; no vision to foresee the changes that were to be wrought or to recognize the potential power of the organized forces destined to cleanse the race of pestilence, famine and ignorance.

I was taught that solid food would kill the typhoid patient. I went into practice and heard of many instances of the death of starved convalescents who had crawled out of bed to get food. In fact, I saw a man with a mild case of typhoid, who had been on broth and buttermilk for four weeks, die suddenly in the fifth week from intestinal perforation. The unruly fellow had gone to the kitchen and eaten his fill of fried chicken.

A MIRACULOUS REMEDY, CHEAP AND ABUNDANT, WAS RIGHT THERE AT HAND FOR MY FRIEND. YET NEARLY THIRTY YEARS WAS TO PASS BEFORE LIVER WAS PRESCRIBED FOR AN ANEMIC CONDITION.

What? Typhoid patients do better, run a shorter course and lose less weight if fed a liberal diet from the onset? I read a flood of articles in confirmation of the experiment. I tried it myself and—why, it wasn't the same clinical picture at all! Well now, I wonder why I never thought of it myself. But I was hardly over my astonishment before I learned something more surprising. Why bother about diet when a solution of dead germs injected into the arm will prevent the disease? Why, of course, I wonder why I . . . Continuing to wonder, I neglected to give myself the vaccine, went down with the disease and suffered ten days of delirium and terrific toxic headaches. But I was well nourished and came through in good shape.

Thirty years of progress—and I have surveyed merely the high spots. In 1966, what may an observer record as he looks back to 1936? Is it too much to hope that he may write down the conquest of cancer, tuberculosis, influenza and pneumonia?

I shall not speculate on this query, for I feel surer of progress in the eradication of another class of disease, the metabolic disorders of middle life that result from the effect of food on the organism. To catch immediately the point I shall make, take a look at any group of modern children fed on a controlled diet; then look on any group of middle aged adults on a bathing beach. What a ghastly contrast!

Certainly no other animal shows any such ludicrous metamorphosis from youth to middle age. Age withers the body, but there should be no such transition as one sees too often—physically perfect youngsters romping with puffing, pot-bellied parents. The more the contrast is observed, the more clearly it appears that there is usually involved a single factor, diet.

During the past twenty-five years the greatest feeding experiment ever conducted has been carried out on the human young. Some elaborate nonsense has been exploited in the name of science; feeding fads have come and gone, but out of it all has emerged a vast group of children such as civilized man never before has seen—vigorous, sun bathed, immunized organisms, their blood streams carrying all the vitamins, minerals and food substances that are essential to health.

If a controlled diet is so vastly important to the child, is it any the less important to the adult in the prime of life or to the aged who value physical comfort above all else? Why should not the vigorous child of today retain at 40, 50 or even 60 his normal body proportions and hence the feeling of well being that comes of perfect functioning of the body-mind unit?

The nutrition expert may answer at once that there is no reason at all, for the perfect diet has been worked out; and as the child reflects his diet, so does the adult. At 40 or 50 one's physical appearance and often one's mental state are chiefly a matter of nutrition. Thinness, fatness, color, energy, days of not "feeling well" and nights of poor sleep are usually direct results of diet. All this is true; but it is clear that the dietitian has about finished his task of working out the perfect fuel for the body machine, and the real solution of the nutrition problem must be left to the psychologist.

As every physician knows, the middle aged person is hard to control in matters of diet, food habits being so powerful as to cause many actually to lie about what they eat. Obviously, more technical information by the expert is not sufficient; that is, to know what constitutes a perfect diet has small influence on the majority of adults who go right on yielding to the pleasures of the palate.

As I view the problem, nothing short of a subtle propaganda by the psychologist will be effective in getting the race interested in its physical appearance. For every human organism, of whatever type, there should be a norm at each stage of its life cycle, and any departure from this norm should be regarded not only as a self injury but as an offense against good taste. A swinelike appearance should be as objectionable as the porcine personality, a pot belly as unsightly a pathologic condition as a goiter.

In short, the new culture should be a body-mind culture, in which the portly aristocrat would be as impossible of acceptance as the shirt-sleeved plebeian at a formal party. From this new pride in body appearance there should follow the new fashion of attending to the body nutrition in private. Making a social function of food consumption would become as outmoded as any primitive custom of man. In fact, the act of eating in public, or together, would be simply beyond the pale, like any other attention to one's body needs. The elegant person would dine as he brushed his teeth, bathed or shaved—in privacy. And he would dine with full knowledge of what and how much to eat. He would know that it is not the immediate pleasures of the palate he desires but that after-sense of well being which comes of perfect body function. He would prolong far into the life that much desired state of "feeling well" and so escape the miserable ailments of the host of "organ conscious" patrons of medical and surgical clinics, sanatoriums, health resorts, "patent medicine" houses, faith healers and herb doctors.

It seems not too much to hope that thirty years from now the intelligent young person will be equipped with knowledge that should make him a licensed pilot of his body machine and thus be fairly certain of escaping the all too common injuries and fatalities that come to present-day middle aged bodies.

SHALL I ESCAPE IT?

By Edwin A. Cameron

HEART DISEASE—shall I escape it? If the reader is not more than 25 years of age he may with fair certainty answer this question in the affirmative, provided he leads a rational life as he proceeds to the age of 40. It is difficult to estimate accurately how large a percentage of the population is actively heart conscious, but it appears that almost every one, at some period of his life, falls victim to a fear of heart disease. The average patient is readily satisfied with but a superficial examination and a hearty reassurance that his fears are ungrounded. He requires of his physician, not a careful diagnosis of his physical condition, but rather a soothing balm to the mental disturbance which overtakes him when he contemplates the popularly recognized results of heart disease—shortened life, inactivity and suffering. As a matter of fact, these are not always the results of heart disturbances.

The intelligent business man is quick in demanding a thorough examination and testing of a used piece of machinery essential to his business, and if the worn article is irreplaceable he immediately specifies that it be used in accordance with its decreased capacity for work. But the same intelligent individual, though recognizing some faulty defect in his human machine and realizing its lack of efficiency, will often be guilty not only of failing to heed the advice of his master mechanic, the physician, but of persisting in running his human machine at maximum load until he becomes bedridden and hopelessly ill. This mode of self destruction has been more evident in the past five years than ever before in the history of the study of heart disease.

Insurance companies, whose statistical data are unquestionably accurate, report that there were three and one-half times as many deaths resulting from heart disease in 1935 as in 1930, and that in the total number of the victims there were about three times as many men as women. The increase in deaths due to heart disease since 1910 has been 75 per cent. The reports further state that in 1935 nearly 1,000 Americans died daily of this disease. In other words, heart disease causes nearly one-third of all the deaths reported. It claims twice as many victims as cancer, its nearest rival in point of mortality rate, and ten times as many as automobile deaths.

The question naturally arises: What is the cause of this astonishingly large increase in heart disease in America? Although one cannot expect a unanimity of opinion on a question as yet not indisputably answered, the medical profession as a whole supports the theory that the greatest single factor in the causation of heart disease is hypertension, or the strain of modern life. As this strain, this rush and excitement continue to grow, heart disease will grow with it. The U. S. Public Health Service states that twice as many deaths whose basic cause was hypertension occurred in 1934 as in 1932. It is a curiously significant fact that heart disease is the most frequent cause of death among physicians, who, while they are comparatively well informed of its ramifications and treatment, almost inevitably lead a most tensive existence burdened with great responsibilities.

THIS article concerns itself only with that phase of heart difficulty which the layman himself can, in some degree, control; that is, the large phase characterized by hypertension as the contributing or exciting cause. It does not include a discussion of the treatment of heart disease but rather suggestions as to its prevention. But even in cases in which the disease is present, unless it is caused by some primary disease, the duration of the patient's life is dependent to a great extent on the patient himself. In the past twenty years, heart disease caused by hypertension has struck with particular violence among the manual laborers and among younger people in general. It therefore seems proper and vital that each individual give definite consideration to the possibility of his being among its victims. Shall it be a gamble or a proper business health problem?

What factors favor this hypertension with the development of a definite heart disturbance? Since a man is approximately three times as susceptible to the disturbance as is a woman, a man will be used to illustrate the types most likely to suffer from hypertensive heart disease.

Let us take as our first prospective case the man of 35 to 45 years of age whose progressiveness and general usefulness have led him to widen his field of interest far beyond his business or profession into active political work, numerous social engagements or any other of the many activities demanding a great expenditure of time and energy. We shall suppose that this individual is of the athletic type and enjoys playing his thirty-six holes of golf on Saturdays and Sundays; or he may play a remarkable game of tennis for one of his age, and delight in a good game of handball or any other competitive sport. His days are full of the energy-exhausting activities conducive to a state of hypertension.

The other type of individual, whose susceptibility to hypertension is more commonly recognized than that of his athletic brother, is the man who continually "keeps his nose to the grindstone." He sets aside but little time for relaxation of any sort, for his waking hours are spent in slavish attention to the many details of his chosen profession.

THERE are certain habits and attitudes characteristic of the hypertensive business man in general, be he the "jolly good fellow" or the "grind." He is likely to show a preference for a well stocked larder from which he is wont to help himself plentifully. He never fails to have his cigarets within reach. Most of them, he assures his physician, are given to friends or business associates, and he is sure that the few which he himself smokes do him no harm since he is careful never to inhale. He justifies his coffee drinking, even though a required check-up may prove it excessive, on the grounds that he considers coffee a fine and enjoyable food which, since it appears to agree with him, must have some nutritive value. Or else he makes the frank acknowledgment that he does a better day's work after the stimulation of his coffee, a fact which he may not have realized until he was forced to reduce his usual amount.

For the prospective victim of heart disease to add alcohol drinking to immoderate eating, smoking and coffee drinking is like adding thick frosting to an already rich cake. It is the necessary finishing touch to the illustration of the typical hypertensive individual. Alcohol increases the food consumption by stimulating the appetite, and it eventually leads, therefore, to an impaired digestion.

The patient is bothered more and more frequently by indigestion and, though his heart may already have become involved, his description of the food which he eats and of the resulting disturbance may confuse even the best diagnostician into believing that his trouble is due entirely to some error in diet. The physician may prescribe some alkali remedy, a course thoroughly satisfying to the patient in whose mind the "too much acidity" theory is firmly entrenched, thanks to the superfluity of advertising on that subject. He does not require and may indeed even refuse a more searching examination into his physical condition, and so the physician can only withdraw, trusting that he may sometime benefit this too quickly satisfied patient by a lesson in the workings of the human body. The patient then carries away with him the doctor's prescribed medicine; and his medicine chest, once containing headache

A LIKELY PROSPECT IS THE BUSINESS MAN WHO IS THE ATHLETIC TYPE AND ENJOYS HIS THIRTY-SIX HOLES OF WEEK END GOLF.

remedies, becomes now a depository for stomach remedies as well.

The patient continues to make further additions to his medicine chest for he is now a man "with his ear to the ground," and so he manages to carry on with more or less comfort. He is, however, becoming increasingly large of girth, and he finally conceives the scheme of doubling the prescribed doses of his favorite remedies, a course which seems justified both by his size and by the increasing severity of his annoying symptoms. He is becoming a bit more aware of his state of health, and the final awakening comes when, on applying for an insurance policy, he passes the physical examination "by a hair" or perhaps not at all. Sooner or later he may note all or any of the following symptoms: a most annoying breathing difficulty on hurrying for a train; discomfort in stair climbing; restlessness in sleeping; desire for a new bed or a second pillow; apprehension about inconsequential details, and a growing irritability. All these he may attribute to his increased waistline, to overwork or to lack of exercise. Whatever may be the cause, he is painfully aware that he is losing his accustomed "pep" and vitality.

CERTAIN personality difficulties offer particularly fertile ground for the development of hypertension, of which the outstanding symptoms have just been enumerated. As examples of susceptible types there are the suppressed, self centered introvert, especially the one whose introversion is associated with nervous tension; the individual burdened with real or exaggerated responsibilities; the individual distinctly maladjusted to his environment, and the victim of changing economic life.

The discussion so far has dealt mainly with the causes and evidences of hypertension, which, though it is not classified as a disease in itself, is a forerunner of serious heart disturbance. The less annoying symptoms of hypertension already described may be followed by an additional symptom, namely, a feeling of chest constriction, pressure or tightness. This is indeed alarming to the patient who seeks prompt medical advice. His "acid theory" has finally failed in bringing him relief, and he is ready to subject himself to the most radical treatment, even to remaining for some time in bed if his condition can thus be improved. This chest constriction is no certain proof of the existence of heart disease in the patient, but it most certainly enhances suspicion on that score. The first urgent warning that something is radically wrong is most likely to occur at some period of great emotional stress, such as an exciting football game, a tense court proceeding or a captain's dinner. In many cases the performance of strenuous tasks such as shoveling snow or lifting heavy boxes will prove beyond the physical ability of a damaged heart and will cause disturbances which point to the weakened condition of that organ.

What is the average man or woman to do for himself in connection with this heart problem? The most potent weapon of the prospective victim of heart disease against his dreaded enemy may be summed up by the quotation of an old Greek proverb: "Moderation in all things." Habit must not be allowed to triumph over reason. Even in these days in which hypertension and resultant heart disease are so great and increasing a threat to civilization, the wise man will give the same careful attention to the needs of his human machinery as to those of the mechanical devices of his office and factory. He will neither overload nor overwork them. No disease was ever created or aggravated by the use of restraint and self consideration.

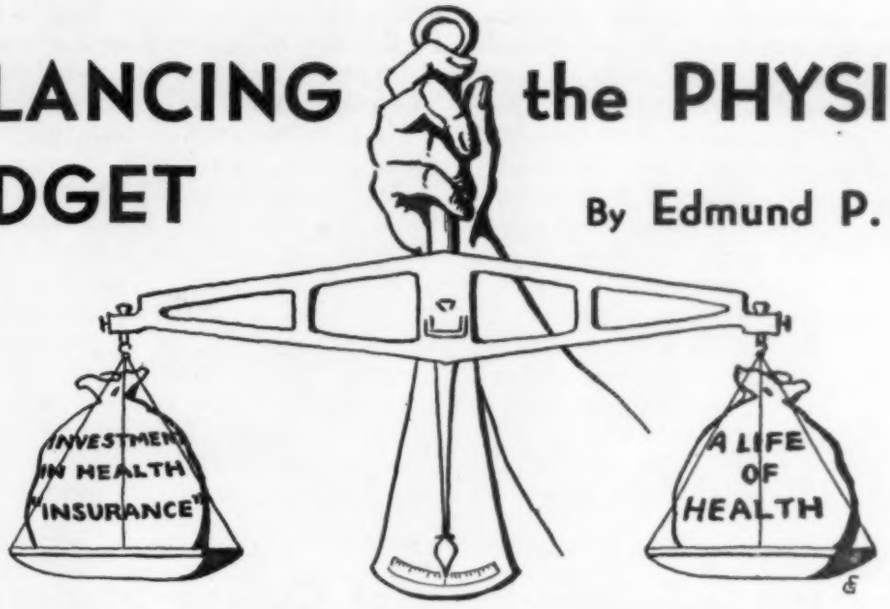
The man who suffers from hypertensive heart disease is either approaching or is already embarked on a physical decline. It will not do him any good to look to medical science for alleviation of his condition, for as yet science has been unable to find a cure for this progressive degeneration. The problem of the duration of the patient's life is purely a mental one, and the solution rests with the patient himself. He may assist his own treatment at any season and in any place, without expense, and often without interruption of business or loss of time. He need only practice moderation, sane living. That a man may do much to prolong his life is evidenced by the fact that not infrequently an elderly person with a diseased heart may, provided he regulates his living rationally, outlive a younger man who gives himself over to dissipated habits. The man who lives by the rule of moderation becomes not only healthier but also more interesting and congenial to those about him.

The expression "a man is as old as his arteries" contains more truth than is popularly recognized. Many an individual 50 years of age has arterial changes characteristic of a man of 65. Hypertension has developed premature senility of the heart.

THOUGH moderation will not always prevent heart disease it is the only weapon that man has for use in an effort to reduce the increasingly large mortality rate due to this disease. Statistics indicate that, unless effective and immediate use is made of this weapon, heart disease will continue to take its toll of more and more victims; a large percentage of these will be comparatively young men who have been too engrossed in acquiring knowledge, judgment and experience in the world of business to assure themselves a long, useful life in which to apply the things they have learned. Shall I escape heart disease? It is a challenge to each and every individual.

BALANCING the PHYSICAL BUDGET

By Edmund P. Shelby



BALANCING the financial budget is a subject whose importance is being driven home by hard times, and many who are struggling to make such a balance are upsetting another one of even greater importance. At such a time it would seem the part of wisdom to examine the other budget and consider the factors that throw it out of balance.

When in health the "physical budget" rarely comes into the field of consciousness; but when accident or illness drives one to the hospital the "cost of medical care" becomes a live subject, and one begins to consider how it may be avoided. A prudent man insures his house against fire and takes out a policy on his life, but he waits until he has lost his health before he is willing to protect it. He has often heard that it is cheaper to keep well than it is to recover from illness, but he will not believe it until he is confined to his bed. Despite the campaign for health examinations the average man of strong muscles is willing to take a chance on his greatest possession, is willing to gamble that he can keep well without help from any one. Perhaps he could in a less complex environment. After he has lost his bet, the bitter tonic of experience teaches him that he would have been far wiser if he had set aside a small sum to pay a health director.

A decade ago many of our loud speakers were saying "the family doctor is as dead as a dodo." Soon voices were heard wailing in the wilderness, and now the demand for the return of the family physician is heard on every hand. Many members of clinical groups now realize to their sorrow that the relationship between doctor and patient always has been and always will be a dual relationship. This return to the appreciation of the family doctor seems to justify the use by him of the title of health director. He is the man who has made a complete examination and knows all your strong points and weak points; he knows the value of X in your physical sum; he can tell you how far you can go and when to stop; he knows your normal capacity and can appreciate what has been lost by illness; he keeps a complete history and full notes of each examination; he can tell you what your condition was last year and the year before; he knows whether you are losing or gaining ground; he takes pride in helping you to keep well; he knows where to call for help when needed, and he is interested in seeing that you get a square deal from all consultants.

From the standpoint of economies it will pay any man to employ a health director to help him balance his physical budget. Two examinations a year may be all that is required to enable one to keep on one's job and avoid the "high cost of medical care."

Most illnesses may be considered avoidable accidents. The man who contracts smallpox or allows his children to contract diphtheria is not only considered negligent but also culpable. Why should a sick man be blamed for getting sick? Because he could easily have avoided smallpox by having himself vaccinated; and by neglecting to do so he endangered the lives of others. Moreover, because he neglected to have his children immunized against diphtheria they spread it in the school.

Not only self interest but the interest of the community demands that each individual try to keep well. The community is doing its part in a big way by providing parks and baths, proper ventilation, pure food and clean streets. But the individual who never consults a health director or who does not know where to find one is not doing his part.

Who can estimate the boost one may receive from the possession of a health certificate? A man who passes an insurance examination often feels so proud he wants to tell his friends. The

restoration of his confidence in his physical state may be a life saver to the man who dreads cancer and is afraid to be examined. It may be demonstrated beyond question by the statistics of insurance companies that frequent physical examinations lessen not only morbidity and mortality but also expense. If that is true, is it not a wise plan for each individual to select a health director, one whom he can respect and trust, and go to him before getting sick, in order that the first examination may show his normal state? At this time the health director should explain to him what his limitations are and tell him what to avoid. He should tell him how to live and keep his health; he should discuss diet, the kinds and amount of exercise, the importance of elimination, the amount of sleep, the kinds and amount of clothing to wear, his limits in the use of tobacco and alcohol, and finally the necessity of avoiding overfatigue and worry. Then he should tell him what are the danger signals in his case, signals which should cause him to ask for advice.

Such a plan should enable one to say, as I have heard said: "My doctor has taught me how to live, and now I don't need him." You may call this suicide, but it is very soothing to the mind of a conscientious physician. Twenty or even ten dollars a year may enable the average man to avoid being sick, and those who cannot afford that amount may be examined in the free clinics. This is the cheapest insurance against the kinds of accidents which are most likely to happen to you and me.

The Physical Superiority of College Students

(Continued from page 801)

his book "Physique and Intellect," thinks that if it were possible to balance social and economic factors, significant relationships between physique and intellect would still exist but would be slight.

Finally, Whipple summarizes the situation by saying that "correlation between physical traits and mental ability should not be interpreted as meaning that, taken individually, all tall boys are, ipso facto, bright boys, but that, taken collectively, those boys whose physical condition is good, whose growth is unimpaired by ill health, faulty nutrition, etc., and who realize to the full the possibility of physical development inherent in them, whether they be ultimately short or tall, will be found to exhibit the best mental condition and the most rapid mental development."

A second factor which tends to differentiate college students from the general population is economic selection. Much has been done in this country toward making higher education available to all young men and women of ability, but few students can attend even our tax-supported universities without some financial resources of their own. Theoretically, this tends to place the selection of a student body to a considerable degree on an economic basis; and actually, Vaile reports that the average income of families of students of the University of Minnesota is in the upper 30 percentile of family incomes in general.

Many studies have shown that there is a definite correlation between economic status and growth. Likewise, there is correlation between intellectual capacity and economic status. Intellectuals may be found in every economic level, but the vast majority of persons of superior intelligence attain an economic status distinctly above the average. There is also a relationship between intellectual capacity and the interest that parents take in the welfare of their children. With so many interrelationships it is difficult to decide whether one factor is more important than another in producing a given result, but it seems probable that the factor of economic selection, with all that it involves, is of major importance in giving us a group of physically superior young men and women in our colleges.

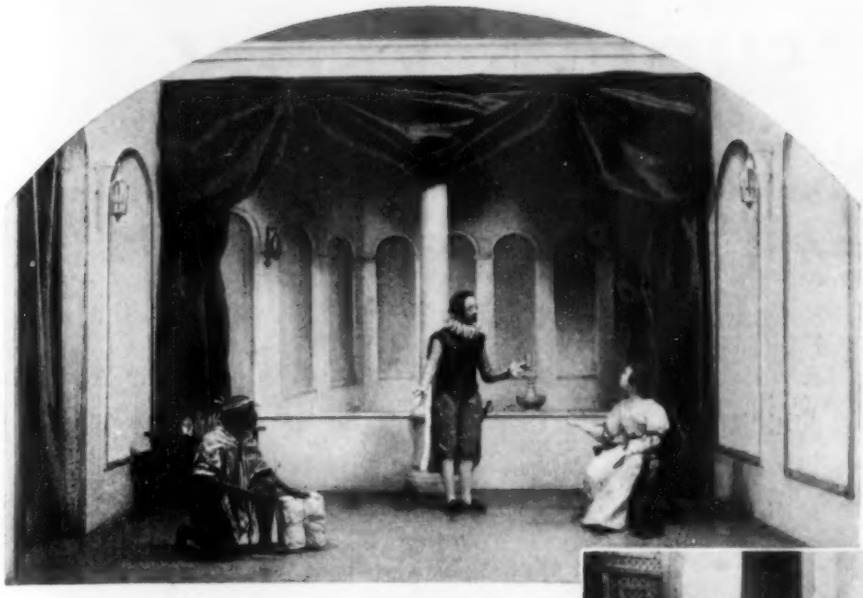
These differences between the heights and weights of the students of certain colleges are probably likewise due to multiple factors, but one is impressed with the fact that both the men and the women in the private colleges tend to be taller and heavier than the students in the state universities and that those in state universities, in turn, tend to be taller and heavier than the students in more local types of institutions. Such trends strongly suggest that here again economic selection may be a most important factor in producing the differences observed.

It appears also that college students of today are physically superior to those of earlier days. Dr. Clelia Mosher reported that Vassar students in 1923 were 1⅓ inches taller than they were thirty-seven years before. More recently MacKinnon and Jackson reported that over a period of thirty years, University of Minnesota men had increased ¾ inch in stature and 4 pounds in weight. Bowles reports that Harvard students today average 1¼ inches taller and 8 pounds heavier than their fathers did when they were undergraduates at Harvard.

So it is apparent that we have in our colleges young men and women who are superior physically both to the general population and to students of a generation ago. Whether this is evidence that the forces of evolution are tending toward a superior race and whether it will continue from generation to generation are questions which only time can answer.

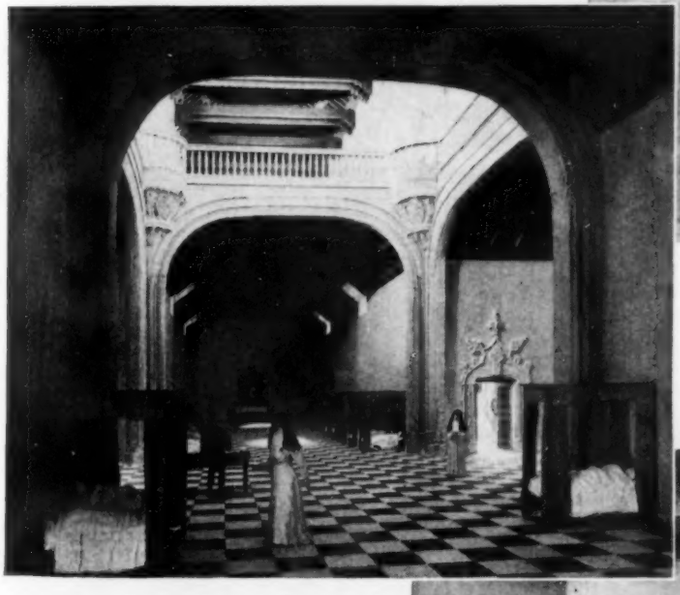
EARLY SPANISH MEDICINE,

as exhibited in dioramas at the International Congress of the History of Medicine, Madrid.



A PERUVIAN COUNTESS WAS CURED IN 1630 OF MALARIA. CINCHONA BARK WAS ACCREDITED.

A HISPANO-MORESQUE APOTHECARY OF THE THIRTEENTH CENTURY EXHIBITS HIS HERBS AND CURES PUBLICLY.



ABOVE IS AN INTERIOR VIEW OF THE SANTA CRUZ HOSPITAL AT TOLEDO DURING THE SIXTEENTH CENTURY.

NICHOLAS MONARDES OF SEVILLE IS DEPICTED WORKING ON HIS CELEBRATED BOOK, COMPLETED IN 1574.

Photos, courtesy of Wellcome Historical Medical Museum

WHAT YOU SHOULD KNOW ABOUT CANCER

By George Gray Ward

EDUCATION as to the known facts concerning cancer is a duty the medical profession owes to humanity. As Lord Moynihan, a noted English surgeon, has said, "We have no desire to scare people to death by a propaganda on this subject, but rather to frighten them into life by urging them to take common sense precautionary care of themselves."

A recent review of the cancer situation published by one of the large life insurance companies shows that there are more adult deaths from cancer today than from any other malady except heart disease. One out of every eight women and one out of every eleven men who have reached the age of 35 are destined to have cancer. Irrespective of the question whether or not the cancer death rate is increasing, the fact remains that it is the second leading cause of death and that the actual number of deaths per annum in the United States alone now exceeds 140,000, and in the world at large probably exceeds half a million.

The saddest thing about this tragic state of affairs is that at least half and possibly three-fourths of these deaths are unnecessary, as this waste of life may be prevented in certain forms of the disease. The three predominating causes of these unnecessary deaths are ignorance, fear and delay in seeking advice, all of which are inexcusable and may be remedied by the coordinated efforts of laymen and the medical profession.

While the cause of cancer is not known, the ignorance of the general public as to what the physicians do know about it is responsible for a certain hopeless apathy of many persons concerning it. What the doctors know about it, laymen should know; and the most important fact is that cancer can be cured if discovered early and treated in its beginning by the present available means. It is like a fire, which in its incipience may easily be extinguished; but if it gets well started it spreads, and a conflagration results which causes complete destruction.

As Shakespeare says:

> A little fire is quickly trodden out
> Which being suffered, rivers cannot quench.

Consequently, the early discovery of the disease is the only way at present which will enable the establishing of a cure.

Ignorance of what has been accomplished in this war against cancer is one of the reasons the general public is apathetic in seeking diagnosis and relief before it is too late. In the cancer clinics of Europe and America more than half of the patients who come early for diagnosis are saved. Even those who come too late for a cure are given relief from suffering, and in many instances, life is prolonged.

Cancer always begins in a small localized area, and it is curable if treated early before the disease has time to spread into inaccessible parts.

Cancer is insidious in its onset. The early symptoms are not alarming. Unfortunately, pain is not an early symptom. If it were, many would seek relief promptly and would be cured. As the early symptoms seem so unimportant it is not strange that the average person fails to appreciate their possible significance. When pain occurs the disease may have progressed too far for a cure, although relief from suffering and prolongation of life may be possible. The treacherous nature of cancer is due to the fact that it is free from pain in the early stages.

CANCER may begin at any age, although the majority of cases occur during the middle and later periods of life. If the condition is untreated the duration of life averages from eighteen months to two or three years.

Cancer is not contagious and is not a blood disease; therefore it is not communicated from one person to another, and there is no danger of contracting it by contact with or nursing the patient. There is no recorded case in which cancer developed from contact.

In cancer the influence of heredity in human beings has not been proved and is so remote that it may be disregarded.

The exact cause that makes a group of normal cells, which compose the organs of the body, change their nature and start to grow wildly, invading surrounding normal tissues and destroying them, is not known. Yet it is known that certain conditions predispose to this lawless growth. Therefore by the prevention or correction of such predisposing factors, cancer may be prevented from developing. These predisposing factors are spoken of as precancerous, and they may be any condition that produces a state of prolonged irritation of any part of the body.

Prolonged irritation of the lips, tongue or inside of the mouth, from carelessly cared for or jagged teeth and ill fitting dental plates, or

CANCER IS LIKE A FIRE, WHICH IN ITS INCIPIENCE MAY BE EXTINGUISHED; BUT IF IT GETS WELL STARTED, ITS FLAME AND SMOKE MAY ENVELOP ALL IN DESTRUCTION.

excessive smoking may produce a sore or ulcer that does not tend to heal promptly. This may be the exciting cause of cancer in these parts. Good dentistry has definitely reduced the percentage of cases of cancer of the jaw.

Neglected injuries resulting from childbearing may be a precancerous condition. A large proportion of the cancers which have developed in women have occurred in neglected unrepaired cases of childbirth injuries. Professor Graves of Harvard studied 5,000 such cases in which these injuries had been repaired. In only 4 of these, cancer developed, and in 2 of these the operation had been improperly done.

Moles on the skin exposed to friction should never be neglected as they sometimes become cancerous if subjected to prolonged irritation.

Illustrations of the rôle of chronic irritation in the production of cancer are shown by the following facts: Dye workers contract cancer from absorption of dye in their bodies. Chimney-sweeps and workers exposed to soot and workers in paraffin and tar are subject to cancer of the skin. Chinese men have cancer of the gullet because they eat their rice at the first table when it is very hot while Chinese women never have it because they do not get theirs until the second table when the rice is cold. Miners are prone to develop cancer of the lung from coal dust. The only place where cancer of the skin of the abdomen occurs is in Northern India where natives carry baskets of hot coals next their bodies in winter, thus producing a constant irritation from burns.

It must be obvious that, as these conditions may lead to the development of cancer, their correction will tend to prevent the disease. A simple sore or ulcer today, if neglected and subject to prolonged irritation, may be a cancer tomorrow.

Such precancerous conditions of the external and accessible parts of the body are readily cured, and the disease is prevented. Precancerous conditions of the internal organs are, however, easily overlooked as the early symptoms are often obscure. Consequently, any irregularity or imperfect function of any internal organ should be promptly investigated, as a cure of the trouble may forestall the disease.

Fear, next to ignorance, is the greatest obstacle to combat in the war against cancer as it causes delay. The foolish fear of knowing the truth at a time when a cure may be accomplished leads people to imitate the ostrich and hide their heads in the sand of oblivion rather than face a possibility. In the majority of instances, if they seek advice early their fears may be dispelled, and they will be happy in the knowledge that there is no malignant disease present or that it is amenable to cure. Knowledge is the antidote to fear.

DELAY in seeking advice may be fatal, for as Benjamin Franklin wrote: "Dost thou love life? Then do not squander time, for that is the stuff life is made of."

The importance of avoiding delay is demonstrated by the fact that 85 per cent of cancer patients seek relief too late.

Unfortunately the symptoms of early cancer are not distinctive, and other diseases may give rise to similar signs. They are precisely the same for the various organs or parts affected as when the condition is not malignant. Hence the difficulty and danger of self diagnosis and the importance of an accurate opinion by a competent physician who has the aid of the microscope and the x-rays which are often necessary for a correct determination as to whether or not the symptoms are due to cancer.

In the breast, for instance, the earliest sign may be a small lump, which may or may not be malignant and which only the microscope can determine.

In the generative organs any irregular bleeding or discharge, however slight, may be the first sign of cancer. In the digestive tract, in which 50 per cent of cancer cases occur, the earliest symptoms may be only those commonly known as "indigestion," which the x-rays help to diagnose.

Persistent hoarseness should never be disregarded. It may indicate cancer of the throat.

Cancer may be undergoing development in certain internal regions for a considerable period of time without any premonitory signs that the patient can recognize. Therefore a thorough periodic health examination is of inestimable value as a preventive measure.

Prevention is much better than any treatment; this means the correction of the various so-called precancerous conditions which produce chronic irritation. Modern women have been taught the great importance of prenatal and postnatal care to guard against many serious and sometimes fatal complications of childbirth. The public has learned the value of fresh air and good hygiene to prevent tuberculosis.

YOU are already educated to the value of going to your dentist periodically for an examination of your teeth without having a toothache to stimulate you in order to conserve these valuable, though not vital, accessories to your comfort and looks. Yet how much more important it is to check up against the vital menace of cancer. Periodic examination, at least once a year, after middle life not only is of value as a safeguard against cancer but may disclose other diseases which may be corrected before they become serious. This is surely a commonsense precaution, such as taking out a life insurance policy. A physical audit is as necessary for your health's sake as a financial audit is for the health of your business activities.

When cancer exists the only cures available at present are surgery, radium, the x-rays or a combination of these in the early stages of the disease.

Beware of so-called "cancer cures," as there is no specific cure for cancer, and there will be none until the actual cause of the disease has been discovered. "Cancer cures" and "faith cures" increase greatly the mortality of the disease by causing such delay that when finally the patient seeks relief from a recognized authority it is too late.

What is "news" to the newspapers may be "death" to the cancer patient. A noted gynecologist has well said, "Scarcely a year passes that we do not witness a wave of hysteria, thanks to the public press and its advertisement of some new cure; and how many additional deaths are checked up to the score of cancer because of that hysteria no one will ever know."

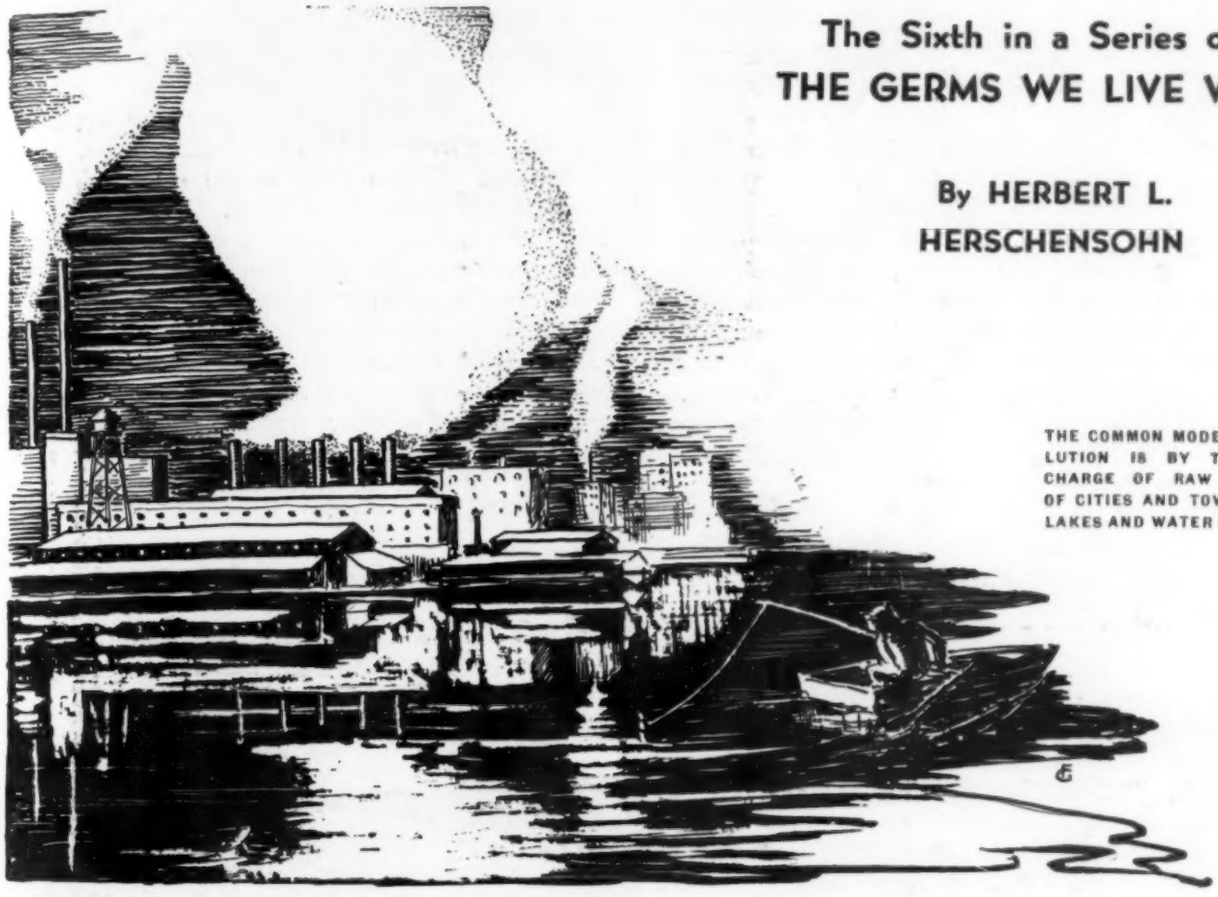
A cancer patient today has a far greater chance of cure than he had twenty-five years ago. While the layman knows of the many cases in which a cure is not effected he rarely knows of those which terminate in recovery, because the patient who has been saved usually conceals the fact that he has had cancer.

The lessening of the great toll of deaths from this disease rests largely with the public itself. If the patient will not seek help from the doctors they are helpless to cure him. The public must do its part by thinking more and acting promptly. It is well to remember that there are hundreds of persons who have been cured of cancer and are living normal lives today.

The Typhoid Bacilli

The Sixth in a Series on THE GERMS WE LIVE WITH

By HERBERT L. HERSCHENSOHN



THE COMMON MODE OF POLLUTION IS BY THE DISCHARGE OF RAW SEWAGE OF CITIES AND TOWNS INTO LAKES AND WATER COURSES.

MUCH to the consternation of a certain Mr. Thompson of New York City in 1906, a household epidemic of typhoid broke out at his country estate at Oyster Bay. Aside from his concern over the welfare of the victims it worried Mr. Thompson that unless the mystery of the outbreak were solved he might experience difficulty in finding tenants for the property during the coming season. Accordingly, he spared no effort or expense to determine the cause of the epidemic. The estate was at that time occupied by the family of a New York banker.

There was something sinister about this particular epidemic. Typhoid was an unusual disease in Oyster Bay. It seemed an odd fact that no cases occurred elsewhere in the vicinity and, what was more peculiar, that none followed. The water supply, the food, the drainage system and every other possible source of infection were carefully examined but without success.

A clue was finally unearthed when it was learned that the family had changed cooks about three weeks before the epidemic started. The new cook, Mary Mallon, worked for the family only a short time, leaving several weeks after the typhoid appeared in the household. Where she went, no one knew. When, after a painstaking search, she was finally located she obstinately refused to reveal anything concerning her history or previous employment. Only through the cooperation of an employment agency was this information obtained. Investigation revealed the following startling facts: In ten years she was known to have worked for eight families, and in seven of these typhoid occurred! She, however, escaped infection in every instance. All in all she had left a trail of twenty-six cases and one death, thus far.

When she was taken into custody at the Detention Hospital of the New York City Health Department, swarms of typhoid bacilli were found in the stools. Yet Mary Mallon appeared to be in perfect health. The deduction was obvious. Her body was a living culture tube in which the germs of typhoid thrived and multiplied, escaping in the feces. Her hands became unconsciously and invisibly soiled. When she prepared a meal the germs were passed from her fingers into the food. She was aptly nicknamed "Typhoid Mary," a name which has gone down in history.

"Typhoid Mary" has taught us an important lesson, especially in regard to the life habits of

the typhoid bacilli. These germs were first observed in 1880. Although they are ordinarily short plump rods, about $\frac{1}{25,000}$ to $\frac{3}{25,000}$ inch, they possess the faculty of growing into long threads. They are able to move about freely under favorable conditions. Their activity is aided greatly by flagella, thin, oarlike protuberances which stick out of their sides on all surfaces, although some of the short bacilli have only a single flagellum at one of the ends.

The typhoid bacilli have no normal breeding place outside the human body. When they are passed out of the body they tend to die. Most of them die within a few hours, but some cling to life for a number of weeks and sometimes for months. They live longer in a temperature which closely approximates that of the human body. They are quickly killed when boiled, and the majority of them are destroyed when frozen. A few can withstand freezing for as long as five weeks; but in spite of this, ice is a negligible factor in the spread of typhoid.

Contrary to popular belief, the life of the typhoid bacilli in privies is short, probably no longer than forty-eight hours in most instances. In sewage, the bacilli disappear in direct proportion to the amount of contamination with other germs, being quickly killed off by antagonistic micro-organisms.

Typhoid, no matter where or when it occurs, is caused by an infection with the typhoid bacillus which has been conveyed either directly or indirectly from a previous case of the disease. Water is the most common medium on which the germ is conveyed. The common mode of pollution is by the discharge of raw sewage of cities and towns into lakes and water courses. It matters little whether the sewage is discharged directly into the water or washed into lakes, streams and wells by rainfalls or floods as so commonly happens in the spring. Frequently, sewage reaches drinking water by percolation through porous soil.

Fortunately, highly polluted water can readily be made safe for public use by filtration or chlorination. The remarkable drop in the typhoid rate of cities bordering on the Great Lakes since the introduction of filtration and chemical purification of drinking water is proof of the efficacy of these precautionary methods.

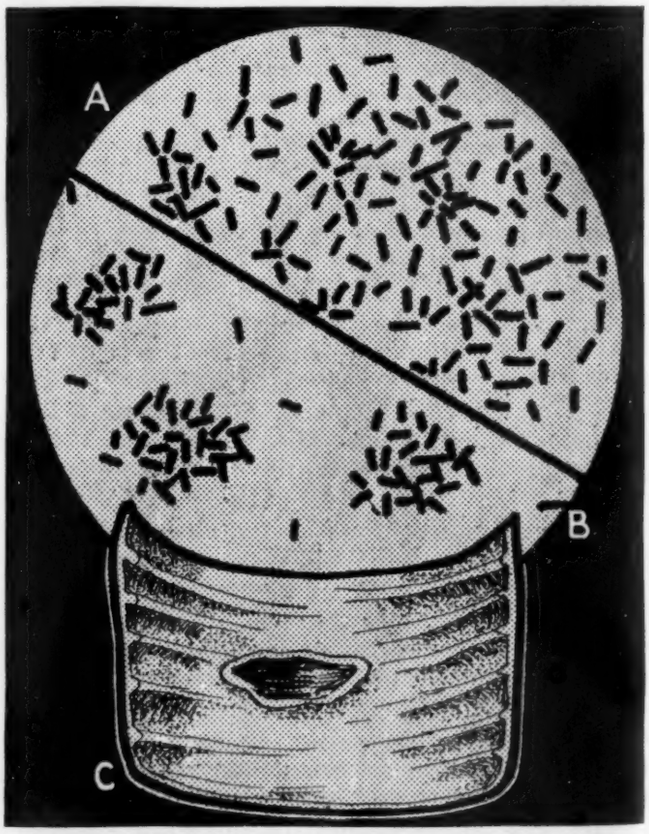
The typhoid bacilli thrive when introduced in milk which remains unpasteurized. In small rural communities milk-borne epidemics of typhoid are still quite common. The germs may be conveyed in cream, ice cream, butter, cheese and buttermilk when produced from infected milk.

Oysters that are grown and fattened in sewage-polluted waters have been known to be the cause of a number of typhoid outbreaks. Likewise, raw vegetables such as radishes and celery when grown in typhoid infected soil or washed by contaminated water may spread the disease.

Flies play an important rôle in the transmission of the typhoid germs. They carry countless numbers of germs on their sticky feet and on their bodies and wings, to say nothing of the swarms which thrive in their alimentary canals. By touching or feeding on typhoid-bearing excreta, flies can harbor the typhoid bacilli for as long as two or three weeks, perhaps longer. When they alight on food they deposit these germs and thus the pernicious cycle (flies-food-feces-flies) is set up, and the disease reaches epidemic proportions.

The typhoid bacilli attack persons in every sphere of life when given the opportunity to do so. But that opportunity must exist. Overcrowding and filth, such as one may find in the tenement districts of a metropolis, do not of themselves contribute to the spread of typhoid infections if the sewerage system is well planned. The slums of large cities enjoy a much lower typhoid rate and morbidity than the rural communities throughout the country.

Some persons seem to possess an immunity against the typhoid bacilli. The fact that one is radiant with health in no way offers any protection against invasion by these germs. On the contrary, the typhoid bacilli find that the



A, TYPHOID BACILLI AS THEY ORDINARILY APPEAR THROUGH THE MICROSCOPE. B, THE WIDAL TEST APPLIED, WHICH CAUSES THEM TO CLUMP IN SMALL GROUPS. C, SECTION OF INTESTINE SHOWING AN ULCER CAUSED BY THESE GERMS.

healthiest and strongest persons are the most vulnerable to their attack, whereas those who are weakened by disease usually show an unexplainable immunity.

After the typhoid bacilli enter the body no symptoms appear for about one or two weeks. The first day of actual onset of the disease is usually ushered in by chilliness, which is quickly followed by fever and a general aching of the body. A severe, persistent headache almost always occurs. Often a mild bronchitis and an annoying cough are present. Within a day or two, bleeding from the nose may take place.

As the disease progresses, the symptoms become aggravated. Each day the fever rises an additional degree, and this tendency is especially apparent in the evenings. In the morning the temperature usually drops. The headache is severe. The abdomen becomes distended and tender.

During the second week of infection by the typhoid bacilli the abdomen and chest become covered with a rose-colored rash. The fever may reach as high as 105 F. Delirium is a common occurrence.

These symptoms continue during the third week. By this time, however, the victim shows signs of prostration and complete physical exhaustion. Weight is lost rapidly. The pulse is double its normal rate.

Those who are fortunate enough to survive the invasion of typhoid bacilli thus far begin to show signs of gradual improvement during the fourth week. The temperature oscillates, ranging from 100 to 104 F. daily, the top temperature dropping by a degree or so each day. All the symptoms begin to subside. Convalescence commences about the fifth week. The danger of complications is just as great during this period as during the earlier stages of the infection.

THE typhoid bacilli can lodge in any part of the body, but the most common location is the intestine. There are a number of lymph glands, which are quite similar to tonsils, on the walls lining the intestinal tract. They are especially numerous in the last two feet of the small intestine, just before it joins the large intestine. These flat, thin lymph glands are familiarly known as Peyer's patches. Tiny ones, about the size of a pinhead, are called "solitary follicles." There are hundreds of these. These bits of glandular tissue are readily sought by the typhoid bacilli. They do not lodge there very long before large wandering cells which possess the faculty of devouring micro-organisms which are harmful to the body make their appearance. These cells pack themselves in the lymph tissue so tightly that the tissue itself is almost destroyed by them. The glands become swollen, not only because of the increased number of cells within them but also because there is an accumulation of fluid due to the choking off of the blood supply.

With the blood supply cut off, the tissue dies. The dead material sloughs away, leaving a deep hole in the intestinal wall. If this hole becomes so deep that it perforates the intestine, peritonitis and a fatal termination are likely. Most of the glands are but moderately affected, and when the dead matter sloughs away, a shallow ulcer is left. The ulcers soon heal, and the patient is ultimately none the worse for this experience which his intestines have undergone.

The only danger other than perforation that may result by the destruction of the lymph tissue is hemorrhage. The exposure of a blood vessel leaves it liable to rupture or damage from intestinal contents. When this occurs, bloody stools appear. Occasionally there is a sudden profuse and perhaps fatal hemorrhage.

BECAUSE of the myriad confusing symptoms which may result from infection with typhoid bacilli, the positive diagnosis is made in the laboratory rather than at the bedside. This is done by means of the Widal test.

Germs cause disease by the poisons which they produce. Each poison is peculiar to each type of germ. As soon as the poisoning appears, the affected person begins the manufacture of an antidote or, as it is more appropriately called, an antitoxin. This antitoxin can neutralize only that one particular type of poison. If, then, it can be demonstrated that the sick person is manufacturing an antitoxin against the poisonous products of the typhoid bacilli, it can be rightfully concluded that a typhoid bacillus infection is present.

The test is simple. A few drops of blood are taken and allowed to clot. Clear serum then separates from the clotted portion of the blood. An infinitesimal amount of the serum, $\frac{1}{50}$ drop, is mixed with a drop of a culture known to contain the typhoid bacilli. If this small amount of serum causes all the bacilli to stop swimming about and to gather in clusters within an hour, the person is producing a special antitoxin against the typhoid bacilli, for this small amount of serum taken from a person who was ill due to any other infection could not have this effect.

It would not be fair to close a treatise on the typhoid bacilli, no matter how brief, without a word of commendation for *The Journal of the American Medical Association* which, since 1913, has periodically revealed the sanitary status of many American cities, thereby stimulating the health authorities throughout the country to attain such high sanitary standards for their respective communities that typhoid morbidity is crushed to a minimum.

JIGGS' TRICK

By Harriet Martin

Part II

IT WAS quite a perfect vacation, George decided, except that—when he happened to think about it—he missed his pets very much. He had four little turtles and about a dozen snails, probably a lot more snails by this time because they multiplied very fast. They lived in a nice big aquarium, and he fed them lettuce leaves and gave ant eggs to the turtles. And while none of these pets was at all responsive, like a dog, for instance (because they didn't know their own names or wag their tails when he spoke to them) George thought about them and wondered whether they wouldn't like it here in the woods. They had to be left behind because everybody said the aquarium couldn't travel five hundred miles in the car. George's friend Bob Carter across the street at home was keeping them for the summer.

But Joan had brought her pet, an enormous black cat with thick silky fur and a sort of thick silky purr too. His name was Muff, and of course he could travel in his basket in the car (except that he wouldn't stay in the basket but climbed around on different laps while they traveled). But that was just the way, it seemed to George: Joan's pet could be with them; his could not.

"Hey, Jiggs!" called Hal. "Get another rake and help me clean up the yard!" George hurried for a rake, because cleaning up meant a bonfire of dried leaves and sticks and things, but it did seem funny to speak of the "yard" when there was no fence around anything and the open space about the cabins wandered down to the beach on one side and off into the woods in the other directions.

"Got a lot of work around here to finish up by Saturday," said Hal. "Wood to saw and pile up for plenty of roaring fires, a couple of canoe paddles to sand off and varnish, and—say! while I think about it, how about oiling that pump? It groans like anything at having to bring up a few quarts of water. Will you bring the oil can, Jiggs?"

As George arrived with the oil can it occurred to him to ask, "What's all this fuss about cleaning up? There isn't going to be a party, is there?"

"Party—and how!" Hal replied. "But not what you think! My gang's due here Saturday, and I'm going to give 'em the works—sailing down the bay, canoeing up the backwater with some portages, trout fishing, swimming off the point, a trip up to the Indian Reservation—everything! I've got to get all these chores done for days ahead so I won't be bothered while they're here."

Hal had pried one of the boards off the top of the well and was poking around with his oil can underneath. "You pump, Jiggs, and then I can tell where it hurts the old tank most. Don't be afraid to push on it, either! I'm going to do this job to a finish while I'm at it."

George pumped away and wished that he could see what Hal was seeing inside the mysterious well. He could not be as excited over the prospect of the big boys' visit as was Hal. "Now," he thought, "it will be just the same as at home, Hal and Joan all the time with their friends, nobody with any time for me."

"This is funny," said Hal. "Goodness knows how old this well is or how deep! Bet this was once an old-fashioned well with a bucket that went down on a rope." He began to sing, in a voice that was muffled from inside the well: " 'The old oaken bucket, the iron-bound bucket, the moss-covered bucket that hung in the well.' Later on, somebody covered it with this platform and put the pump in to make it easier. Look here, how far down you can see? And see how wide it is, with rough stones on the sides? Take a look, but be careful you don't take a tumble!"

It was so dark down in the well, after the bright sunshine outside, that at first George could see nothing at all. Then as his eyes became used to it, he could see the light from the open part of the top reflected on the water, and his own reflection peering up at him. The water seemed far below, and it must be cold down there. Hal held onto his belt while George leaned further inside and let the cold damp air cool his face. It was fun, too, to hear the strange ghostly echoes come up when you talked into the well. George amused himself making all the funny noises he could think of, to hear them come back.

WHEN he had tried barking and crowing, honking and sirens, Hal grew tired of holding him and said, "Let's finish the raking and then come back and try the pump again; that will give the oil time to kind of sink in. I'm going to leave that board off, so *keep away from the well!* You too, Muff—scat!" for Muff noticed the different air from the open well and was sniffing about inquiringly.

They raked a long time and were so hot when they finished that Hal suggested a swim before lunch. When they came up from the beach, Joan had sandwiches and cold tomato juice,

apple sauce and cookies all ready under a tree. It was fun to sit there in the shade, all cool from the swim, and to be just alone with Hal and Joan. Mother, Daddy, Uncle Harry and Aunt Grace had gone down the bay on a fishing trip and wouldn't be home till evening, and Joan was the housekeeper for the day.

A SQUIRREL hopped close to get bits of bread they tossed to him, and on the beach below, little waves dabbled at the stones. It was so lovely, George could have sat there all the rest of the day, just nibbling at cookies and watching things. But after a while, when the cookies were all gone, Hal jumped up, exclaiming, "Back to your jobs, my men! Jiggs, man the pump once more!"

He himself took the oil can. As they approached the well a faint cry came to them, full of distress but muffled because, they discovered, it came from inside the well itself! "Meow! Meow!" It was Muff's voice, calling as plainly as he could say it, "Help! Help!" When the boys got to the open top and could look in, Muff told them in cat language, "Hurry! Hurry! I can't hold on much longer."

Looking down they could see him about six feet below the surface, clinging to the side of the well. In falling, he had managed to catch hold of a little rocky ledge, and there he hung by his front paws; but there was no place for him to climb to, and his back feet slipped on the mossy rock as he tried to get a foothold.

"Go get Joan!" Hal exclaimed as he began to pull another board off the well top. George hurried as fast as he could, and Joan came back, anxious and out of breath. Looking into the well, at first she could see only poor Muff's two

"OH, GET HIM QUICK, HAL! HE'LL FALL! MAYBE HE'S BEEN THERE A LONG TIME AND WE DIDN'T HEAR HIM," JOAN CRIED.

green eyes in the darkness and hear his frightened cries. When she saw him clinging there to the slippery rocks and in danger of losing his hold, she began to cry.

"Oh, get him quick, Hal! He'll fall! Maybe he's been there a long time and we didn't hear him, and he can't hang on much longer!"

George was looking at his big brother too; and as Hal stood there uncertain what to do, Joan began to wring her hands. "Do something, Hal!"

"I don't know what to do," poor Hal admitted miserably. "Can't reach him with a ladder and can't let down a rope, and I can't hang by my own toes and reach him."

Suddenly George straightened up. "I can hang!" he said. "I'll do it!"

Joan looked at him wildly and Hal uncertainly. "How could you?"

"You two hold my feet and lower me in the well, till I can get hold of him."

"I couldn't!" wept poor Joan. She was trembling all over, and indeed it didn't seem as if she could.

Hal decided it. "We'll have to try. Not another chance. Pull yourself together, Sis! It's *your* cat we're saving!"

George was already crouching at the opening. "Hold me around the ankles," he said, "and don't let go!" He braced himself with both hands while they grasped him about the legs and began to lower him.

"Get a good hold on that leg, Sis, and I'll hold this one," Hal instructed. "All set, Jiggs? Easy, now. Lower away!"

George fixed his eyes on Muff and tried not to look beyond him, down where the dark water glimmered far away. They were gripping his ankles so firmly that it hurt; but he wanted them to hold tight. "Here, Muff! Here, Muff!" he said as he came down closer to those bright green eyes watching him, full of fright.

"O.K., Kid?" Hal asked.

"I can't reach," gasped George. It was hard to talk, hanging that way. "Lower! Lower!"

"And I can't reach any further," gasped Joan above.

"You'll have to," commanded Hal sternly. "Lean over some more. You won't fall."

George reached out his fingers. He could barely touch Muff's ears, and he musn't grab until he could get a good hold, for fear he would knock Muff off. Then when they managed another little jerk that let him down a bit more, he stretched his arms for all they were worth and got both hands around Muff's neck.

"All right," he said. "Got him!" and he held Muff as tightly as he could, in spite of the cat's clawing and scratching. Muff only understood that he was being rescued from the slippery stone, and he wanted to get his claws into something that would hold him better.

It was all Joan and Hal could do to pull him back up. Joan, sobbing so she could not see at all, was blindly obeying Hal's orders. Hal was pretty shaky himself when he finally set his little brother down on solid ground again, and he only said, "Good kid!" as he patted George's shoulder.

George began to rub his ankles where they had been held so tightly and his wrists that Muff had scratched; and only Muff himself, who should have been most grateful, was too upset by the experience even to say "thank you." He scampered off and hid safely under the porch all the afternoon, as if he felt that in that place no cold slippery well could get him.

When Joan got through putting salve on George's scratches and Hal finished covering the well, none of them seemed to care about doing any more work, so they went for a canoe ride down along the shore. Usually Hal and Joan paddled and George sat on the bottom between them, but this time Hal helped Joan into the middle place and handed the bow paddle to George before he pushed off and took the rear seat himself. George's ankles still smarted, and so did his wrists, but he wouldn't mention it. He was taking a man's place now, and he paddled as evenly and firmly as he could, his back straight and strong toward the others.

That evening when they were all back home again and Joan had coaxed Muff out for a saucer of milk, there was a great deal of talk about the afternoon's adventure and a great deal of talk about George's prowess.

"Aw, shucks!" said George, and he took a walk by himself up to the clearing in the woods to see whether the deer was there.

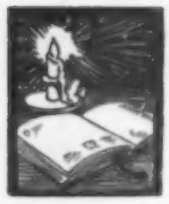
And on Saturday, when the other big boys came and George was helping to put up the tent where they would sleep, Hal said, "Say, fellas! You know George's trick—standing on his head for hours at a time? Don't laugh! If he hadn't been so good at it you probably wouldn't be here now. We'd have no cat, no drinking water and no peace in the family." And he told the whole story, and the high school boys said admiringly, "What do you know about that?" and "Good old Jiggs!"

Then Hal said, "How about going with the rest of us fellas on our canoe trip, George? You have to carry your own pack and take your turn paddling and portaging and pitching camp, with the rest; but you can do it!"

The others looked at him too and said, "Why don't you, George?" and "Sure, come along!"

Daddy added, "Only don't wear yourselves out on this trip, because we have real work to do when you get back. Uncle Harry and I are getting some lumber to build a garage and screen the porches, and all four of us will have to help."

New Books on Health



SANITY FIRST

By Joseph Jastrow, Ll.D. Price, $2.50. Pp. 312. New York: Greenberg, Publisher, Inc., 1935.

THIS book is another effort to reduce to comprehensible terms for the lay reader the difficult problem of mental hygiene. In common with all books along this line it contains a large amount of material which is entirely unnecessary for the well adjusted and balanced individual, and unfortunately it will probably be of little service to the readers who need it most. Professor Jastrow writes from a long experience and on the whole has produced a balanced book which ought to help explode many of the false theories which are being promulgated by fuzzy-minded thinkers and by those with systems or courses to sell.

However, there are few who, looking at the history of the human race, will agree with Professor Jastrow's optimism about the process of making over the basic characteristics of human nature; but after all, whatever can be accomplished will be that much gained. This can hardly be classified as an outstanding book, but it will undoubtedly be a useful one.

W. W. Bauer, M.D.

WHAT EVERY TEACHER SHOULD KNOW ABOUT THE PHYSICAL CONDITION OF HER PUPILS

Pamphlet No. 68, U. S. Department of the Interior. Pp. 30. Washington, D. C.: U. S. Government Printing Office, 1936.

IT IS a fundamental principle in health education that no instructor can teach effectively without knowing about the health of his pupils. Probably teachers have depended too much on their school physicians for such information, but the best educators today realize that the teacher is in the first line of defense in detecting signs of communicable disease and gross defects. These considerations have led Dr. James Frederick Rogers to write this useful pamphlet, which is a revision of Health Education Bulletin No. 18.

Dr. Rogers tells his readers explicitly about the various signs of disease, how to test the eyes and ears, how to record the history of defects and how to suggest what may be done after the examination. Reference is made to daily inspection and cooperation with the school doctor and the school nurse.

J. Mace Andress.

TEXTBOOK OF SOCIAL DANCING

By Agnes Marsh and Lucile Marsh. Price, $1.00. Illustrated. New York: J. Fischer and Brother, 1935.

THE authors aim to present a systematic method of teaching social dancing to large groups of students in high schools, colleges and recreational centers. There are several chapters devoted to theory and technic. The latter part of the book is devoted to social gatherings.

The material is presented in a concise and easily understood manner. There is a yearly supplement to the book which contains new steps, ideas for dance contests and suggestions for parties which develop during the current year.

The book is profusely illustrated.

Merriel Abbott.

YOUR FIGURE

By Marguerite Agniel. Price, $3.00. Pp. 228. Illustrated. Garden City, N. Y.: Doubleday, Doran, 1936.

MISS AGNIEL believes that the way to body beauty is through proper exercises. The exercises in this book have been used in her health and body beauty classes.

At one time an invalid, the author helped to restore herself to perfect health through a careful study of the physical needs of her body.

She emphasizes the fact that muscles affect one's daily life and health. She believes that ten minutes a day of the right kind of exercises will do things to help a person's waist line, hips and legs, as far as physical beauty is concerned; and will repay, from the point of view of personal health and good nature, the effort expended.

The chapters in this book include: Universal Rhythms; Exercises for the Spine; Posture; How to Walk; Reducing the Figure; Reducing the Hips; Exercises for the Abdomen; The Symmetry of the Bust and Chest; Exercises for the Shoulders; Back; The Allure of Arms; Legs and Ankles; Expressive Hands; Feet; Exercises for the Neck; Facial Exercises and Care of Skin, Eyes and Teeth; Cultivating Curves; That Tired Feeling; Women's Disorders; Nerves and Habits; Exercises for Pregnant Women; The Menopause; Relaxation, and The Fascinating Forties.

One cannot adopt the statement that if the advice given in this book were followed to the letter, the "tired business woman" would become a myth.

However, the clear, direct style and illustrations (which were posed by the authoress) should help all who are interested in physical culture.

Philip Lewin, M.D.

MEN, MONEY AND MOLECULES

By William Haynes. Price, $1.50. Pp. 186. Illustrated. Garden City, N.Y.: Doubleday, Doran & Co., Inc., 1936.

THIS is a story of the relation of chemistry to everyday life. Emphasis is placed on the fact that the United States chemistry industry is not a war baby but is three hundred years old.

P. A. Teschner, M.D.

PUBLIC ENEMIES NO. 1

Food, Drug and Cosmetic Racketeers

By S. R. WINTERS

THE CRIMES against society committed by food, drug and cosmetic racketeers are not so spectacular as those committed by America's notorious gangsters, but they are more insidiously dangerous because of this very fact. These crimes are not so extensively publicized; therefore, the consumer-public is not so protected against them. "Forewarned is forearmed."

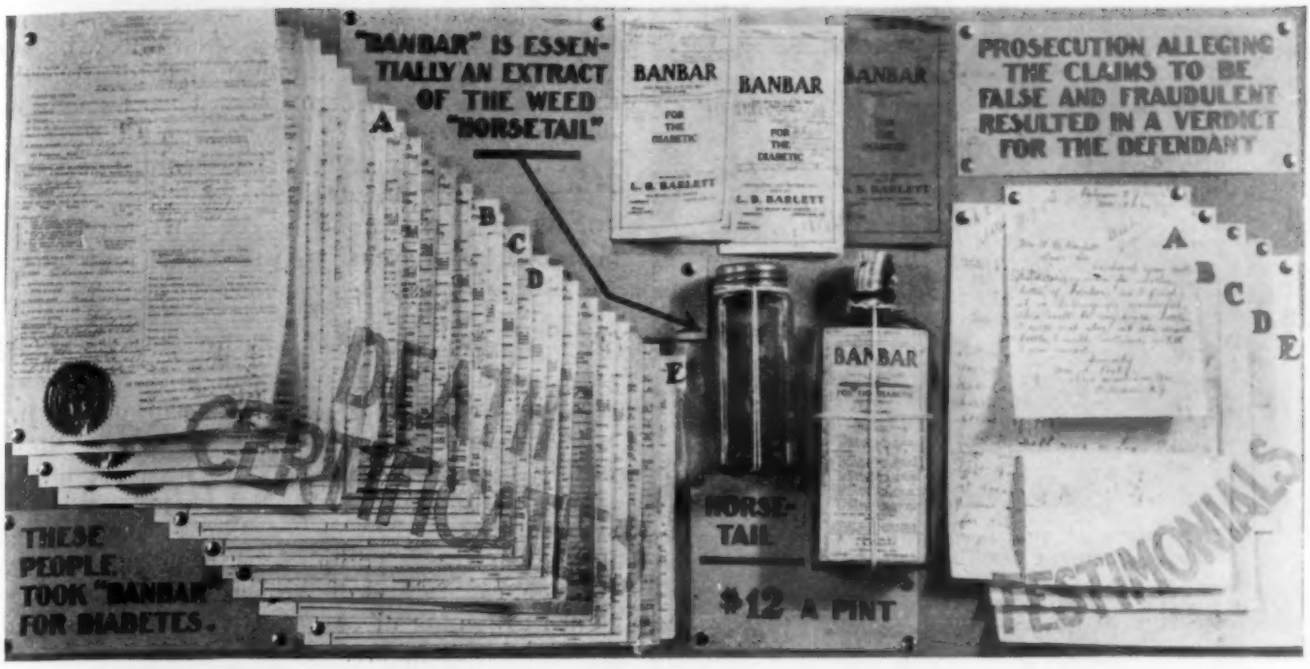
Of recent years, it is true, some publicity has been given to the increase in fraudulent food and drug merchandise flooding the market. Nevertheless, a large number of persons are seemingly uninformed as to the menace threatening the public safety.

In 1933 the government lost a case against "Banbar,"a drug manufactured by L. B. Barlett, an ex-shirt salesman of Pittsburgh, which constituted a vicious fraud. Banbar is manufactured from an extract of "horsetail" weed, which in Colonial days was used by women to scour pots and pans. It was known as "scouring rush." Banbar is offered as a treatment for diabetes. It sold, formerly, for $12 a pint but has recently been reduced to $9 a pint, as a concession to the depression. On the one hand is a pile of death certificates, issued for the testimonial signers, and on the other, a file of testimonials. The cause of death—diabetes. Diabetic patients can now live out a normal span of life if they follow a doctor's orders, including diet, the use of insulin and the usually prescribed treatment for their disease. But the unfortunates who put their faith in the fake remedy Banbar were and are doomed to an early grave. Why do so many of them write testimonials? Are they paid to do so? They are not usually paid, for it is not necessary in most cases. The patient is so joyous over being able to eat what he likes, give up the insulin treatments and pin his faith on Banbar that he fervently believes in its claims. He believes because he *wants* to believe.

Across the corner of one testimonial Barlett wrote "dead." What is the significance? The man was not physically dead, but rather only as a sales prospect. He wrote to say that he had finished his sixth bottle (the course prescribed by Barlett) but would continue using Banbar. Less than a year after this, he died.

The foregoing case shows what the government is up against in its attempt to protect the public against hundreds of dangerous or, at the least, worthless nostrums. Our present Food and Drugs Act, enacted in 1906, is not strong enough. It is full of loopholes for those who know its weaknesses, and the majority of these quack manufacturers do know them.

ALTHOUGH THE BOX, SHOWN IN CENTER, BEARS NO THERAPEUTIC CLAIMS, THE DISPLAY CARD WHICH ACCOMPANIES IT DESCRIBES ITS "BENEFITS." THE PRESENT LAW HAS NO TEETH FOR SUCH ADVERTISING AS THIS.



THE DEATH CERTIFICATES HERE ARE THOSE OF DIABETIC PERSONS WHO TOOK BANBAR AND THEN DIED OF DIABETES. THE LETTERED CERTIFICATES CORRESPOND TO THOSE LETTERED TESTIMONIALS WHICH THEY WROTE ON THE PRODUCT.

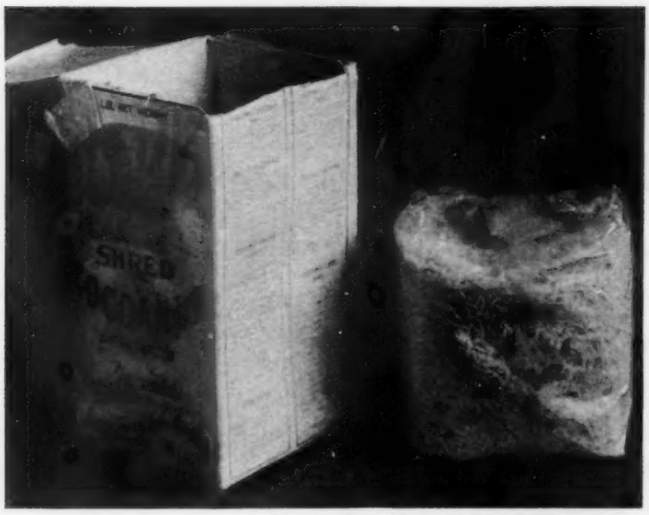
There is need for a new Food and Drug Act to correct the difficulties of the present law. Such an act should prohibit any statement, whether on the label, in collateral advertising, or over the radio, which is not supported by sound scientific evidence. Under the present law the government has no jurisdiction over advertising beyond that on the label, and then only in interstate commerce. The true composition of many products on the market is secret and may be changed at the whim of the manufacturer. The law requires only eleven substances to be declared on the label. Since 1906 many substances have developed which are more potent for harm than some of those the archaic law prescribes. The statute does not include cosmetics and contains no teeth by which the unscrupulous promoter may be thwarted. Only when the labels of medicines bear "false and fraudulent" therapeutic claims or misrepresent the identity of the ingredients are they subject to legal action. And we have seen what a big loophole the word "fraudulent" affords the dishonest manufacturer.

PERHAPS you recall the case of Eben M. Byers, wealthy Pittsburgh manufacturer and former amateur golf champion, who lost his life from the use of "Radithor, Certified Radium Water." He lost his health and resorted to dosage with Radithor. The medicine literally disintegrated the bones of his head. Before he died it was actually dangerous to go near him, he was so irradiated with the element. Radium is too dangerous an element for use by the unskilled. Yet the market is flooded with radium devices and medicines. Some of them are truly radioactive and therefore extremely dangerous for general use; others are not radioactive as claimed and are therefore simply junk; but fancy prices are charged in either case.

SOME of these radium devices are purported to make the old young and to cure all diseases, including cancer. Electric belts, pads, plates and machines are commonly sold under similar claims. Necklaces of glass beads strung on wire have been advertised to cure all afflictions, by selecting health-giving and germ-killing radio waves from the air. Other necklaces, with alternate disks of copper and zinc between the beads, were represented as being generators of enough electricity to cure goiter. These are all devices or gadgets, and as such, the present law governing food and drugs has no jurisdiction over them. Even the labeling on such contraptions is unrestricted.

Tens of thousands die annually through temporizing with fake contraptions alleged to cure practically every deformity or disease under the sun. Troubles of the prostate, rectum and uterus, frequently due to cancer, tumors or other diseases, are aggravated by gadgets sold as a cure for these troubles; some cancers and tumors are caused by them.

Beware of "pain killers." They may result in that cessation of all pain—death. Many contain powerful ingredients that can be safely used only in carefully restricted dosage and at infrequent intervals. Many deaths have resulted from an overdosage of headache powders, containing acetanilid. Another danger accrues from taking the drug over a long period of time by those who suffer chronic pain, for it may



THE BUYER OF THIS PRODUCT HAD A SURPRISE COMING WHEN SHE OPENED THIS PACKAGE LATER.

destroy the oxygen-carrying power of the red blood corpuscles. The victim turns blue, and serious illness and death sometimes follow. While acetanilid is one of the few drugs that the law requires to be declared on the labels, that is not enough warning, as attested by the continuing list of tragedies resulting from its indiscriminate use. The average purchaser cannot avoid its dangers unless the label carries precise warning against misuse.

PREPARATIONS used for rheumatism, neuritis and similar troubles may contain a drug, cinchophen, that injures the liver. Among many reports in recent medical literature on the fatal effect of cinchophen is one from the Mayo Clinic, concerning five fatalities. In October 1932 six deaths from cinchophen poisoning were reported in *The Annals of Internal Medicine*. Such reports continue to multiply. The present law doesn't even require a label declaration of the presence of cinchophen in medicine containing it.

Amidopyrine has claimed many victims. This drug is found in many pain relievers, especially those for the periodic pains of women. It does not affect adversely all who take it, but among individuals susceptible to its use the drug curtails or destroys the function of the tissues that make white blood corpuscles. The chemical has caused many cases of the malignant agranulocytic angina, which "consists mainly of a deficiency of granulocytes, one of the white blood corpuscles. It is associated with ulcerations of the throat, increasing weakness and almost inevitable death."

THE market is literally deluged with antifat preparations. The majority of these concoctions contain a dangerous drug, dinitrophenol, which actually does reduce weight by speeding up the bodily processes and literally burning the tissues, including the fat. But in payment for a slender figure may be exchanged eyes, health and even life. Too dear a payment, isn't it? Nausea, abdominal distress, fever, blindness and death are some of the results of taking dinitrophenol fat reducers. The law does not control drugs used for changing the bodily structure or function, or those used for diagnosis. So, until the power of the government is strengthened, it's up to the consumer.

What price beauty? Far too often the price paid for the attempt to become beautiful by using certain cosmetics is the loss of both beauty and health. Americans spend between 2 and 3 hundred million dollars a year for cosmetics. Fortunately, most of the preparations are harmless, but many are quite definitely unsafe. Since the present Food and Drugs Act has no control over the manufacture or sale of cosmetics, it's every woman for herself, and may heaven help the unwary purchaser. Let us consider the case of the woman who went to a beauty parlor to have her lashes dyed. The operator used an eyelash dye called "Lash Lure," which is still on the market! The woman's face is now horribly disfigured, and her sight is gone. "Before and after" pictures appear on the bottle of eyelash dye, but the actual before and after pictures tell a different and sad story. The same

THESE ARE PLAIN NOODLES HONESTLY PACKAGED
LABELED "PLAIN NOODLES" BUT CONTAIN ENOUGH EGG TO MAKE THEM LOOK LIKE EGG NOODLES
LABELED "PLAIN NOODLES" BUT YELLOW WRAPPER MAKES THEM LOOK LIKE EGG NOODLES
WESTCHESTER CHICKEN...RICE
9% Chicken
47% Rice
44% Gravy, Butter, Peppers, & Seasoning
9% CHICKEN MEAT DISPLAYED TO LOOK LIKE MORE
VENEERED WITH WHITE MEAT
DERBY CHICKEN

THESE SAMPLES VIVIDLY ILLUSTRATE HOW MANUFACTURERS CAN PACKAGE THEIR PRODUCTS TO DECEIVE THE BUYER.

"Lash Lure" has caused one death, numerous injuries and several cases of total or partial blindness.

Then there is the case of "Koremlu," a cream depilatory, advertised as "harmless" and "beneficial to the skin." Its advertising declared "and now these ugly hairs can never grow again." This product contained 7 per cent thallium acetate, a deadly poison commonly used to kill rats. Baldness, skin injury, nervous troubles and glandular troubles were some of the effects produced by Koremlu. The drug is no longer on the market, not because it was stopped by law—it couldn't be—but because the company was forced into bankruptcy by an accumulation of damage suits brought against it by the injured users of Koremlu.

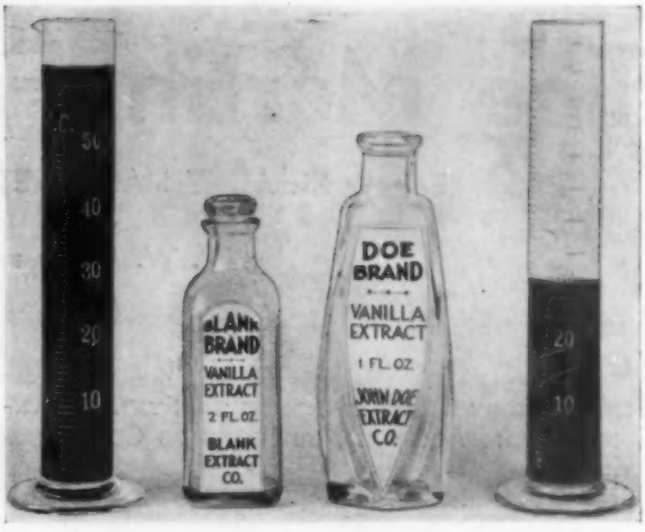
Some cosmetics contain lead acetate, which may lead to chronic poisoning by absorption into the system. Others contain arsenic, which also may result in chronic poisoning. Still others have mercury in them, and to individuals susceptible to the toxic effects of the element, poisoning may be the result.

"THE Chamber of Horrors," at the Department of Agriculture in Washington, D. C., a large, rectangular room, contains literally hundreds of nostrums, impure foods, overrated foods and fake aids to beauty. The visitor to this chamber will be disagreeably and alarmingly surprised at the number of the exhibits, at the mute testimony against hundreds of manufacturers who are not playing squarely with the consumer. But the visitor will be glad to find that the Food and Drugs Administration and the American Medical Association are doing everything in their power to suppress impure and dangerous foods and drugs. They are, so to speak, the "G-Men" in this particular field of crime. For crime it is.

One of the major "rackets" at the present time is the business in the salvaged or "distressed" merchandise. About fifty-five firms and individuals were found by the Food and Drugs Administration to be engaged in the practice of taking up old stock from druggists' back shelves, for which they exchanged new goods, manufactured by themselves—"playing both ends against the middle." Other merchandise was picked up at bankruptcy or fire sales. This merchandise was then dumped on the unsuspecting public, thus forming a serious hazard to public health.

Frauds in foods are a constant menace to health and to the pocketbook; when they are not really injurious many foods are underweight, below standard or otherwise misrepresented. Thanks to the pure food law the housewife may be reasonably certain that the canned goods, butter and other foods she purchases for her family are reasonably safe; but she can't always be sure that she is getting full value.

Some of the practices resorted to by dishonest retailers consist of blowing up ice cream with



A SMALL, PLAIN BOTTLE OF FLAVORING EXTRACT MAY CONTAIN TWICE AS MUCH AS A LARGER, FANCY BOTTLE PRICED THE SAME.

air and soaking oysters in water so that they may look plump and succulent. Then there is the deceptive packaging of products by their manufacturers: putting false bottoms in cans, jars or packages; or placing white noodles in yellow cellophane bags to produce the effect of egg noodles and many other similar tricks. Not only do these practices harm the consumer; they work against the honest manufacturer.

Some of the economic cheats substitute low-grade foodstuffs, cheaper ingredients or articles differing from what the purchaser believes she is buying. Macaroni made from low-grade flour —13,800 pounds of it labeled as being made from hard wheat flour—was one item confiscated by the Food and Drugs Administration last February. Many hundreds of cans of substandard canned goods were also seized. Chili powder and chili pods, disclosing on analysis a dangerous amount of arsenic, were confiscated.

"VITA-VEG," a mixture of flour, bran and between 10 per cent and 12 per cent of phenolphthalein, a coal-tar cathartic, to be used in what the manufacturer called a "laxative health bread," recently cost its manufacturer $600. Bread is a staple article of diet. It is consumed by every one from infancy on and should not be used to mask the presence of a powerful laxative.

Also in February there were several violations of the Caustic Poison Act. Three of the eight cases dealt with toys. One was a balloon outfit which contained a dangerous acid to be used in generating gas for the balloon. Two cases concerned miniature chemistry outfits containing dangerous chemicals.

There are innumerable other cases of dangerous drugs and nostrums and of fraudulent, dirty, decomposed and poisonous foods that are continually appearing on the market; but the few mentioned here should suffice to make the consumer pause before he purchases.

The Martin Family Vacation

Episode XI: AUNT MARGARET: SHE TALKS TOUGH, BUT - -

By W. W. Bauer and Florence M. Bauer

CHIMES

MUSIC

INTRODUCTORY ANNOUNCEMENT: STATION ANNOUNCER: ACCORDING TO STANDARD COPY.

MUSIC

DAY'S ANNOUNCEMENT: STATION ANNOUNCER: *We left the vacationing family last time, if you will remember, enjoying a barbecued dinner—Mother's treat—at a restaurant they had picked very carefully, with special attention to cleanliness. While they were waiting for their food, they began to wonder where they were going next, and some one suggested they visit the children's Aunt Margaret, whose home is only a hundred miles or so from where they happened to be. It didn't take long to decide that, and here we are, if you please, listening in on their arrival in front of Aunt Margaret's comfortable, rambling old house, with tall trees all about, a bright garden in the rear, and the general air of comfortable hominess that only the older and more leisurely generations know how to achieve. Are you ready to listen:*

(The motor is heard running and is then shut off.)*

MR. MARTIN: Well, here we are. It hasn't seemed to change a bit, and yet it's been a good many years since I was a boy here.

MRS. MARTIN: Blow the horn, George, and see if anybody's at home. *(The horn is blown several times.*)*

MARY: Here she comes. *(She calls loudly.)* Hello, Aunt Peggy.

AUNT MARGARET *(puffing a little):* Well, for land's sake. Who'd have thought I'd see you youngsters today? Though it's about time. John, how many years is it since you've paid me a visit? Never mind, it's a disgrace even to speak of it, it's been so long. Here you've got a perfectly good automobile, and all you have to do is get in and drive it, and still and all you don't come to see a body more than once in a pig's lifetime.

MR. MARTIN: Wait a minute. W-a-i-t a minute. Where's George?

GEORGE: Yeah, where's Uncle George?

AUNT MARGARET: And where would you suppose he'd be? Fishin'. Did you ever see the time when that man wasn't fishin'?

MRS. MARTIN: Near here? Will he be back for supper?

AUNT MARGARET: Won't be back for three-four days. Gone way up north—said he might cross over into Canada, if he felt like it. Said he'd be back when I saw 'im.

GEORGE: Gee, I wish I was with him.

MARY: Fat lot of fish you'd catch.

AUNT MARGARET: Well, I see the young 'uns gets along just about as amiable as always.

MR. MARTIN: Yes, but if anybody outside the family picks on one of 'em, then they both join forces against him.

MRS. MARTIN: But tell us what you know, Margaret. You're looking fine.

AUNT MARGARET: Oh, sure. Some folks, the older they gets, the tougher. There ain't so awful much to tell, except we've been havin' a lot of excitement around here about typhoid.

MR. MARTIN: Typhoid!

AUNT MARGARET: Yes. There's been a couple of cases around. Mrs. Hooper's been taken to the hospital up the line at the county seat. Sent the big ambulance down for her—she was that sick. Didn't figure she'd get well, but she fooled 'em. Martha always was one to do the unexpected. An' then there was the Young's child, little Marry Jane. I guess she come along since you been here last. She stayed at home, and she wasn't so very sick. And Zeke Tobias down at the store—my goodness, where's George and Mary?

MR. MARTIN: There they go, walking down toward the well.

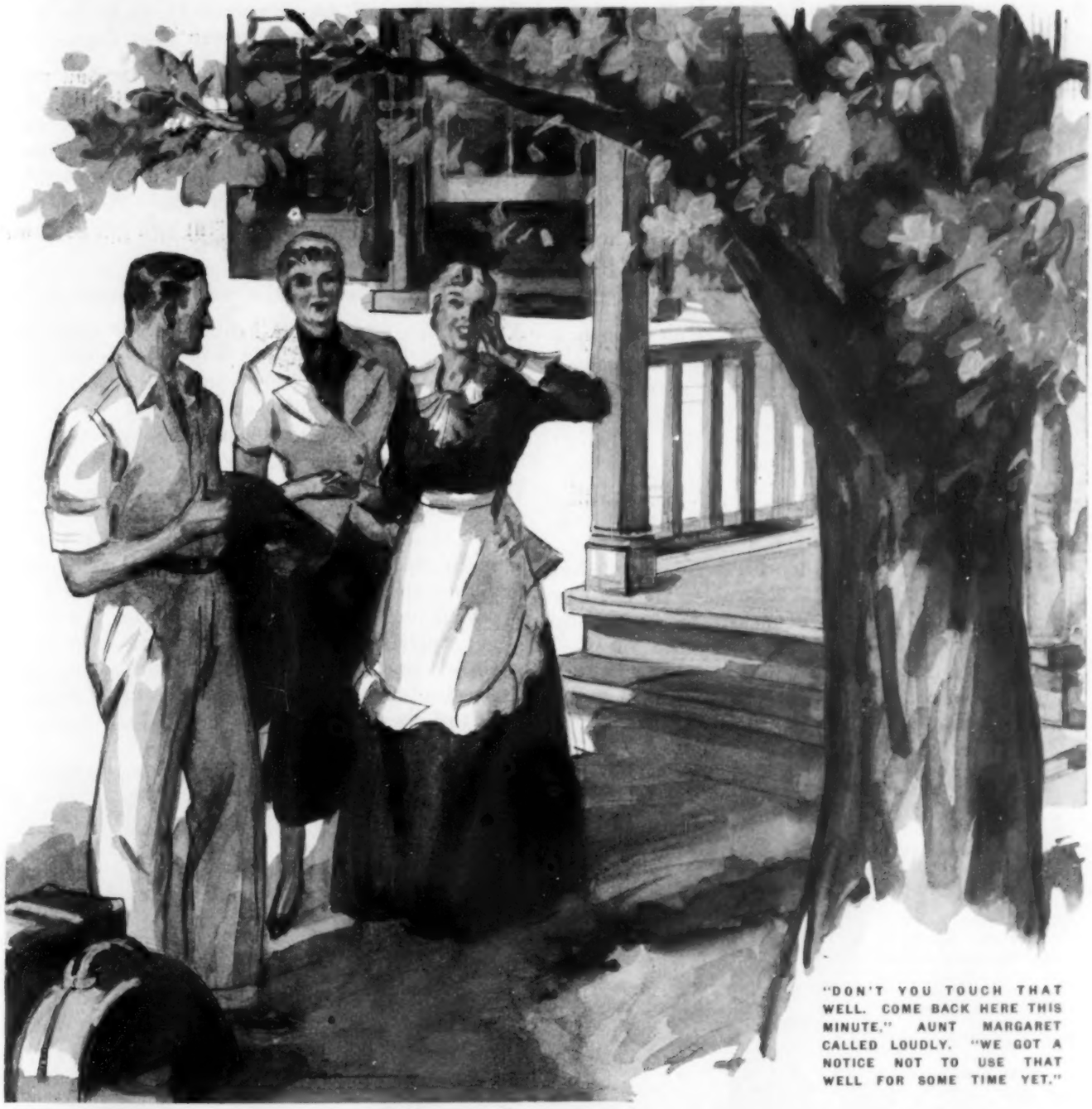
AUNT MARGARET: My land sakes! *(She calls loudly.)* George. Mary. Don't you touch that well. Come back here this minute.

GEORGE *(calling from a distance):* We're going to fill up your water buckets.

AUNT MARGARET *(still shouting):* You're goin' to do no such thing! You're comin' right straight back here like I tell you. Do you think, just because you've got to be pretty near 6 feet tall that you don't have to do what I tell you? You come here!

MRS. MARTIN: Why, what's the matter?

AUNT MARGARET: Matter enough. Got a notice not to use that well or any other well around here that's between 30 and 50 feet deep.



"DON'T YOU TOUCH THAT WELL. COME BACK HERE THIS MINUTE." AUNT MARGARET CALLED LOUDLY. "WE GOT A NOTICE NOT TO USE THAT WELL FOR SOME TIME YET."

MR. MARTIN: Notice? From whom?

AUNT MARGARET: From the county nurse. Come here, George.

GEORGE: What's the matter, Aunt Peg? Can't a fellow carry water for you any more?

MARY: Yes, Aunt Margaret, when George gets that much ambition to work, you really oughtn't to spoil it.

AUNT MARGARET: H'm. I seem to remember a little girl that always had somethin' else important to do when it come to dishwashin' time.

MRS. MARTIN: Margaret, I think you're charming, the way you beat my children at their own game.

AUNT MARGARET: Yes, I lived a long time in the same house with their father, and he and I got along just like George and Mary. It was mostly his fault, too.

MARY: It's almost always George's fault, too, when we don't get along.

GEORGE: Go on, beat it.

MARY: Stop it, you big tramp. Let go the back of my dress.

GEORGE: Come on. Down to the pump you go. That's just one crack too many.

AUNT MARGARET: Oh, let 'em go, John. *(Sounds of scuffling and Mary's protests are heard, gradually growing fainter while the rest laugh.)* A little ducking won't do a bit of harm. Girls are a lot too fresh nowadays anyhow.

MRS. MARTIN: So they've condemned your well, eh?

AUNT MARGARET: Not exactly condemned it. Only warned us not to use any wells of that depth until we've had 'em examined. And what do I know about havin' a well examined?

MR. MARTIN: Just why do they choose wells between 30 and 50 feet to warn you against?

AUNT MARGARET: Well, it seems the state board of health, or something, got to snoopin' around about these typhoid cases, and they found that every one of 'em was gettin' water from wells that run down into the first layer of ground water, and that's about 60 to 80 feet down. After that comes a layer of rock—hard-pan, George calls it—and then a deep layer of ground water. And they say the deep water's all right, but the other isn't. I don't know much about it.

MRS. MARTIN: It's easy enough to get your well examined.

AUNT MARGARET: What do you know about that newfangled stuff? My goodness, Grace, I've lived here for—well, for pretty long—and never a word about our well until now. I had a good notion to tell that young county nurse that come here and give me the warnin', to run along and play with her dolls.

MR. MARTIN: I would have liked to be here when she came—just to see your face.

AUNT MARGARET: Oh, you would, would you? Well, I want to tell you, John Martin, that you ain't showed much anxiety to see my face these last years, an' you and your family'd better come visitin' me oftener, or first thing you know I'll plump your Uncle George and me down on you an' stay till you get good an' tired of seein' my face.

MRS. MARTIN: But what about the county nurse?

AUNT MARGARET: Well, I dunno. She seemed to know a lot, even if she was young enough so I could have been her grandmother. And she wasn't a bit uppity about what she knew. She was one o' them kind o' people that you just feel sure they know their stuff.

MR. MARTIN: Like you, Peg?

AUNT MARGARET: Huh! Taffy. Don't you go tryin' that kind o' stuff on me. I'm too well acquainted with you. So I says to myself, the world moves, old girl, and maybe you didn't get much schoolin', but you got some horse sense, and anybody with horse sense takes good advice when they get it, even if it comes out of the mouths of babes.

"SEE? YOU FILL IT THREE-QUARTERS FULL," EXPLAINED MRS. MARTIN. "THEN YOU CORK IT, AND NOW JUST KEEP IT ON ICE UNTIL GEORGE CAN TAKE IT TO THE LABORATORY IN TOWN."

MRS. MARTIN: So you don't use the well? Where do you get your water?

AUNT MARGARET: Oh, I use the well, all right. But I boil every bit of the water first. That's what the nurse told me, and she give me a real sensible explanation why, too. Yes, sir, that was a nice young woman. We set here quite a spell eatin' doughnuts and havin' a cup o' coffee—but say, what are we standin' out here for? We can talk about the well later. Right now, let's get George and Mary away from that pump. He ain't got the little wildcat ducked yet, has he? And then let's go in, and I'll slap you together a couple of bites for supper—though it won't be much, I can promise you that.

MR. MARTIN: It won't be much? I guess we know better than that!

AUNT MARGARET: Oh, you do, eh? You got a long memory, you have, considerin' how often you come to visit a body.

CLOSING ANNOUNCEMENT: STATION ANNOUNCER: *And so, at Aunt Margaret's, they run into a health hazard which exists throughout the United States in rural regions more than in cities—typhoid. Once one of the commonest and most dreaded of diseases, it has practically vanished wherever pure water supplies and proper disposal of sewage have been provided, and where pasteurized milk is sold. It is worth while to know about this, and to insist, as you travel through the country, on pure water and pasteurized milk, or else to be vaccinated against typhoid before you go.*

MUSIC

CHIMES

Episode XII:
SHALLOW WELLS and RURAL NURSES

STATION ANNOUNCER:

In the last episode, we followed the vacationing family to the home of the children's Aunt Margaret, in a little country town where life is still leisurely. But they found some excitement there, in the form of a typhoid outbreak, which had been traced by the state board of health to contamination of the upper layer of ground water, from which many of the local wells drew their supply. Residents had been warned by the county nurse not to use well water from wells of a certain depth unless first the water had been boiled. Perhaps few of us, as we journey on our vacation through lovely countrysides, stop to realize that serious danger may lurk under all the beauty of nature, or that rural public health nurses are to be found throughout the length and breadth of this land for the purpose of safeguarding us against just these dangers. But let's get back to our family, now enjoying a visit with Aunt Margaret, and listen:

GEORGE: Yeah, there's no doubt about it, Mother is great on the cheap treats.

MARY: I'll say so. One day I bought 'em sodas, out of my allowance; George bought barbecues; Dad bought a watermelon, and what do you suppose Mother bought us?

AUNT MARGARET: All in one day? Huh, I should have bought you castor oil!

MARY: Aw, you would not. Guess what Mother bought?

MRS. MARTIN: Oh I'll admit it. I bought popcorn.

MR. MARTIN: Twenty cents worth.

AUNT MARGARET: Twenty cents too much, I'd say. When I was a girl, if we had one treat a week we thought we had something.

GEORGE: Gee, listen. You'd think she was dangerous. How about some more cookies?

AUNT MARGARET: You know where they are, young man, and your legs are younger than mine.

MARY: Can we have some more?

AUNT MARGARET: Yes, and there's more lemonade in the icebox.

GEORGE: She talks tough, but she's got a kind heart.

AUNT MARGARET: You get on your way and bring those cookies, or I won't have. Don't you suppose your mother and father want some more, too?

MR. MARTIN: Well, Peg, I suppose we'd better get out there, now that we've had some supper, and get the water out of your well for examination.

AUNT MARGARET: Don't you want some more lemonade and cookies?

MRS. MARTIN: Oh, I couldn't eat another bite. I don't know when I've enjoyed a meal so much.

AUNT MARGARET: That's because you didn't have to cook it. 'Twasn't but a bite.

MR. MARTIN: I'd hate to try to eat a dinner of yours, if that was only a bite.

AUNT MARGARET: Well, you'd better eat a dinner of mine tomorrow. I don't like folks that mince and pick over their food. They don't need to come again.

MR. MARTIN: Don't worry, I'll be right on deck. Come on, let's go out to the well.

MRS. MARTIN: Have you got the bottle boiled?

AUNT MARGARET: Yes.

MRS. MARTIN: And the cork?

AUNT MARGARET: Yes, for five minutes.

MRS. MARTIN: All right, then come along. Close the screen quickly, John, or you'll have the house full of flies. *(A door bangs.*)*

MR. MARTIN: It doesn't look a bit different here than it ever did.

AUNT MARGARET: Oh, the place gets older, just like the rest of us.

MRS. MARTIN: I don't think you and George will ever get old.

AUNT MARGARET: Huh! More taffy.

MR. MARTIN: "She talks tough, but she's got a kind heart."

AUNT MARGARET: And you talk too much, John Martin—always did, ever since I washed your dirty face for you when I was a kid and you were just a tadpole.

MR. MARTIN: Well, you needn't tell everything you know. Ah, here we are at the well. Now what?

AUNT MARGARET: You said pump it out good first, didn't you, Grace?

MRS. MARTIN: Yes, five minutes.

AUNT MARGARET: That ought to keep John quiet for a while. *(A squeaking pump handle * is heard through most of the rest of this episode, and Father's speeches are spoken as if with some effort. Father is manning the pump!)*

MRS. MARTIN: How long have you had this well, Margaret?

AUNT MARGARET: Oh, my land, don't ask me! How old do you think I am, anyway?

MRS. MARTIN: Oh, of course, I didn't mean—

AUNT MARGARET: Of course you didn't. That well was on the place when my mother and father moved in the year after they were married. And how long ago that was, is nobody's business.

MRS. MARTIN: I suppose it was a very good well to start with.

AUNT MARGARET: Sure, and look at it now. If that isn't as clear a stream of water as you'd want to get out of a well, I don't know what is.

MR. MARTIN: What about the time? Is somebody watching it?

AUNT MARGARET: Don't worry about the time, young man. You pump!

MR. MARTIN: Boy, and how!

AUNT MARGARET: 'Twon't hurt you a bit. I bet you sit at your desk all day long, with your feet up half the time!

MR. MARTIN: Oh, not with the feet up.

AUNT MARGARET: Don't tell me. "Mr. Martin is in conference," says the redheaded young lady at the telephone, with her nose in the air, the last time I was in to see you. And when I got into your office the desk was covered with fishing tackle. Conference—my eye!

MRS. MARTIN: He really does work hard, Margaret. *(Continued on page 853)*

HEALTHGRAMS ✣ from Articles in This Issue

¶The human body, resembling the machinery of an automobile or even more remarkably a great laboratory, withstands much abuse and is subject to much repair. *See page 802*

¶During the past twenty-five years the greatest feeding experiment ever conducted has been carried out on the human young; but out of it all has emerged a vast group of children such as civilized man has never seen—vigorous, sun bathed, immunized organisms, their blood streams carrying all the vitamins, minerals and food substances that are essential to health. *See page 813*

¶When in health the "physical budget" rarely comes into the field of consciousness; but when accident or illness drives one to the hospital the "cost of medical care" becomes a live subject, and one begins to consider how it may be avoided. *See page 819*

¶Friction is no more dangerous between matches than between individuals. *See page 788*

¶Cancer always begins in a small localized area, and it is curable if treated early before the disease has time to spread into inaccessible parts. *See page 822*

¶Statistical data suggest that this country may be slowly developing a superior physical type related in some way to intellectual superiority. *See page 798*

¶Typhoid, no matter where or when it occurs, is caused by an infection with the typhoid bacillus which has been conveyed either directly or indirectly from a previous case of the disease. *See page 825*

¶Theoretically, each meal should have one hot dish. However, this is not always practical in fall and spring for the children's school lunches. *See page 793*

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

What Is Adolescence?

THE FIRST OF A SERIES OF EDITORIALS ON UNDERSTANDING THE ADOLESCENT

TO THE great majority of adults the period of life known as adolescence, or the "teen age," is *terra incognita.* As contrasted with the preceding period it seems to be without rhyme and reason and is subject to curious changes and inconsistencies. This is a time when most adolescents apparently outgrow their clothes so fast that parents feel the burden of expense and effort in keeping them properly dressed. There is a marked change in the interests and emotional life of adolescent boys and girls. They appear restless to a degree that is most annoying to their parents and teachers. The inconsistency of adolescent behavior has been recognized since the days of Aristotle. Dr. G. Stanley Hall probably noted these inconsistencies more effectively and in greater detail than any other modern writer. In his epochal work, "Adolescence," he summarized his observations in contrasting modes of behavior. He believed that adolescents tended to oscillate between extremes, which might briefly be epitomized in the following table of contrasts:

Activity	Idleness
Happiness	Depression
Self confidence	Self depreciation
Good conduct	Bad conduct
Interest in society	Interest in solitude
Selfishness	Altruism
Nice sensitivity	Hard heartedness
Enthusiasm for learning	Indifference to learning
Interest in knowing	Interest in doing
Conservatism	Radicalism
Wisdom	Folly

ALTHOUGH there are marked differences between individual adolescents it would not be difficult to take any youth that one knows and note some of these striking contrasts. For example, James is a nice looking boy of 16. Usually he shows great capacity for and interest in hard work, but at times he has such serious spells of laziness and so neglects his responsibilities and opportunities that he becomes a problem at both his school and home. Sometimes he is the "life" of a social group and takes delight in leadership, but often too he likes to be left entirely alone. Although usually happy, he is frequently so morbid that he feels that life is not worth living and considers suicide. It would be possible to continue this description with many details.

IT IS NOT odd that in this shifting world of apparent confusion adults wonder what it is all about. The principles of guidance which worked fairly well in the preadolescent period seem to be no longer dependable. Adolescence is frequently compared to a kind of disease which the poor youth and the parents are called upon to endure. No wonder then that parents sigh for a time when this adolescence, whatever it may be, will give way to stable maturity.

While the total literature on adolescence is vast, many writers on adolescent psychology, such as Edmund S. Conklin, believe that it is still a neglected field of research. There are still many gaps and uncertainties in our knowledge, and authorities are not agreed as to the correct interpretation of the facts available.

One point is clear. The period of adolescence lies between childhood and adulthood. It is a period of transition. Boys and girls during this period are neither children nor adults. The practical problem of guidance is difficult because they can not be treated either as children or adults. For both adolescents and adults this is a period involving difficult and profound adjustments. It is often referred to as "the age of storm and stress," "the awkward age" and "the silly age."

THERE is a general agreement of opinion among psychologists that there is no sudden change in the growing person which marks the beginning and the end of the adolescent period. Formerly this change was thought to be greatly exaggerated. It is now believed that the change is a gradual process, so gradual that sometimes parents and teachers find it hard to realize that it is or has taken place. This means that sometimes the adult through ignorance of these changes is not able to offer the best kind of guidance.

In the editorials which are to follow, the editor of the School and Health Department will attempt to sketch briefly the most significant problems of adolescence and interpret them for teachers who wish to understand their pupils better.

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SCHOOL and HEALTH

For the 1936-1937 Term

IT IS THE purpose of the School and Health Department to keep its readers informed about the latest advances in the theory and practice of health education. In the past it has tried to accomplish these ends by editorials interpreting activities in school health, by special articles from the field of actual achievements and through reviews of books for teachers and pupils.

This department during the coming school year will follow the same general plan as in the past with some modification. First of all, the material is being arranged for the school year rather than for the calendar year. An attempt will be made to offer ideas of practical worth for every month of the year.

Beginning with this number of the magazine there will be three series of regular features.

J. Mace Andress, the editor of the department, starts a series of editorials on "Understanding the Adolescent" with the current editorial, "What Is Adolescence?" This will be followed by discussion running throughout the year of the physical, mental, moral, emotional and social growth of the adolescent and the psychological principles adopted by the best teachers for the guidance of youth in health education.

We are pleased to announce also a series of practical articles on "Teaching Safety in Our Schools" by Florence Nelson, the editor of *Safety Education Magazine*. The first article is "Planning a Safety Program with Your Pupils in September" in which Miss Nelson suggests activities in safety education for elementary and secondary schools. Her monthly articles will contain timely suggestions especially valuable for teachers of all grades.

Miss Amy Rachael Whittier, head of the Teacher Training Department of the Massachusetts School of Art, contributes a special article, "The Art Teacher Looks at Health," which is one of several articles to appear in a series entitled "Art in the Service of Good Health." Miss Whittier is not only interested in training teachers to teach art but she has had a keen interest in the health education movement since its beginning. She plans to indicate how the classroom teacher may use art as a tool in teaching health.

In addition to these new and special features there will be other articles describing health achievements in our schools.

HEALTH LESSONS FROM REAL SITUATIONS

Teaching Health Through the Lowell Flood

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Our best teachers today find their health teaching problems in the environment of their pupils. Actual life situations are more illustrative than imaginary ones presented by a textbook. Miss Turner shows how the flood last spring at Lowell, Mass., was the beginning of some serious health teaching. HYGEIA *was a fruitful source of helpful information.*

GRADE five had perfect attendance at last, after a week of hardship and confusion caused by the flood. Most of the children were eager to talk about their experiences. Many asked, "How are they going to make things the same as they were before the flood?" "Are we going to be inoculated?" "Why must we, and how do they do it?" This interest proved a perfect setting for a unit that would not only teach health, but would also develop civic pride and a realization of the need for social cooperation.

When all sides of the situation were presented to the children we found that we had an extensive problem, for it involved public health, public safety, both local and national relief agencies and historical and geographical facts about the flood. It was realized, of course, that all of this information could not be gained in a week. So a plan was made in which the following topics were taken up: sanitation; cause and prevention of disease, including inoculation; work of civic organizations, such as the Red Cross, and the regulations governing inspection of water, milk and food supplies. In the weeks that followed a great deal of information was acquired.

Our chief reference sources were magazines and periodicals, particularly HYGEIA. In the health period of our day's schedule the important facts culled from these articles were discussed. During the penmanship period these facts were recorded in the health notebooks. The great problem of how to restore sanitary conditions to the sections affected by the flood was taken up by a special committee. At the end of the week this committee gave a report that was posted on the bulletin board in the hall where all might read it.

The cause of typhoid fever naturally lead to a discussion of proper sanitation, especially in regard to drinking water. The fact that every one was required to boil the water before drinking it opened up the field of germ control. A visit was made to the local filter station where the underlying principle was explained by the man in charge. The mention of harmful bacteria made one boy explain that he lived near the city bacteriologist. Consequently, a visit was made there too. As a result of this call, dust was later examined under the microscope loaned to us by the city bacteriologist. The children learned the different types of bacteria. They were so intrigued by this study that they tested food that was several days old, dust scraped from their desks and dirt from under their finger nails. Since they had found out how important clean water and clean food was to health the children then set out to learn the regulations governing the inspections of the local water, milk and food supplies.

Naturally following from this point was the problem of how to prevent having typhoid fever if one had drunk polluted water. Some of the children whose homes had been in the flooded area had already been inoculated. They described their experiences and stressed the fact that the injection was painless. Since our school was located quite near the flooded section it was suggested and agreed

that every one be inoculated. The information about inoculations involved a large amount of research, for it introduced the definition, content, and result of serums, toxins and antitoxins. The local doctor was of great help in giving us much information in this field.

Then came the question of what organizations were in charge of rendering relief to the sufferers. Here the power, organization and history of the Red Cross was looked up by a special committee and reports made to the class. This also lead to a discussion of the relation of local and national agencies. Some of the girls became so much interested in nursing as a result of their information in regard to the Red Cross that a bit of vocational guidance was introduced with talks by the school nurse and a short talk by the school doctor. Although the doctor was extremely busy, he kindly consented to give a short talk to the boys. After the pupils had received instruction in some of the principles of nursing and first aid, they decided to give a demonstration. It was given on a Friday afternoon to grade four and to the mothers and fathers of the pupils.

Since only forty-five minutes a day was allotted to the study of health, much of this work had to be interwoven into the other school subjects. This proved to result in more initiative, interest and a keener zest on the part of the children for each particular subject of study. Many were only too eager to tell of their experiences during and after the flood which made an ideal situation for oral stories. There was much less difficulty in keeping the story centered upon the point at issue, and there was practically no imitating because all of the children had different experiences. A play was written by the children themselves about the flood, stressing safety and the part played by the Red Cross.

The geography period became more enjoyable and more satisfying to those who before had appeared lax and uninterested in the subject. It was now more vital and useful in their lives. The physical facts about the Merrimac River at normal times were contrasted with those at the time of the flood. A contour map was constructed in the drawing period. During the history period, a study of the lives of great persons who had done much to prevent the spread of disease was taken up. The biographies and works of such heroes as Pasteur, Jenner, Koch, Gorgas and Florence Nightingale became quite real to the children.

The culminating activity was a pantomime presentation in which each child appeared bearing in front of him a large poster on which was written a particular phase of the health work which would make our city a healthier and a safer place in which to live. All of the suggestions for healthy living were made and drawn by the individual children. This pantomine was given as a part of our May Day celebration of health. To this performance all parents and friends were invited.

This unit describes situations in which the children actually lived their health experiences out of the natural environment. The effect of such types of activities on the lives of the children must result in healthier and richer living.

PLANNING YOUR SAFETY PROGRAM IN SEPTEMBER

FLORENCE NELSON
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To plan an effective safety program it is necessary to know what dangers are actually present in the environment of school children. In the first of this series of articles on safety Miss Nelson who is in close contact with the most progressive methods of teaching safety suggests how we can get at the actual needs of children so as to teach that which is most needed.

IS YOUR safety teaching based on the accidents which happen most frequently in your community? That is perhaps the most important question to be considered in planning a classroom and activity program for the new school year.

Too often safety instruction is not directly related to local accident experience because sufficient time has not been given to collecting and studying accident reports. Unless the program takes into account the hazards which children encounter in their everyday lives, it will not accomplish its primary aim—that of reducing accidents going to and from school, at school, at home and during playtime.

A teacher told me the other day that her children had suffered an alarming number of injuries from razor blades. I expressed some astonishment, since this would not ordinarily be a major accident problem of the sixth grade. My friend went on to explain that carelessness in the disposal of blades in the home and their use as a substitute for scissors, knives and other proper tools accounted for the large number of injuries. It was interesting and gratifying to see that a unit of work had been developed around this particular accident situation. The resourceful teacher had seized the right moment to emphasize the safe use of tools and caution in handling things with sharp points and cutting edges.

According to National Safety Council studies of student accidents recorded in school systems with 544,000 enrolment, injuries may be classified as follows:

In school buildings and grounds	35%
At home	32%
Going to and from school	9%
Other places (streets, playgrounds, etc.)	24%

This indicates the seriousness of home accidents as well as the surprisingly large percentage occurring in school buildings and grounds. Better supervision and organization in corridors, locker rooms, gymnasiums and on the playgrounds is evidently much needed. The School Boy Patrol is performing a valuable service at school intersections and has undoubtedly been effective in reducing accidents on the way to schools. But the fact that almost four times as many accidents happen on school premises as on the daily trips to school is significant. What is the situation in your community? Is this a problem which should receive particular attention this year?

Local information on child accidents may be obtained from police and health departments, hospitals, state departments of motor vehicles, local safety councils and motor clubs. A more complete record may be secured through the use of the Standard Student Accident Re-

porting System devised some years ago by the National Safety Council. It is now in use in cities with school enrolments of almost a million.

In this system only two forms are used: a card on which each accident is recorded and a summary sheet which classifies all accidents. The report cards are collected and filed in the principal's or superintendent's office. At the end of the month they are sorted and grouped: first, according to grade and then according to the type of accident as shown on the summary sheet. The cities using the reporting system forward their monthly records regularly to the National Safety Council's Statistical Division where general summaries are compiled and made available.

In addition to discovering special grade, locality, seasonal and other problems, accident reports form a basis for checking the efficiency of the safety instructional program. If it is not possible to undertake this activity in a general way, although it is strongly recommended, each teacher may easily keep her own accident record. For example, an accident chart may be hung on the wall of the classroom. All injuries which require a doctor's care, or involve absence of a half day or more should be recorded. The pupils will enjoy working to improve their accident record.

The importance of using actual situations in teaching safety has already been mentioned. The injection of the subject matter of safety into the regular subjects of the curriculum is a second method which is being used most successfully. This has almost unlimited possibilities for stimulating the interest of the children and adding greatly to their fund of information.

September is a splendid time to organize a Junior Safety Council and plan an activity program through which the pupils may put into practice the knowledge they have acquired in the classroom. The set-up of such an organization will depend upon the size and type of school and other local factors. Ordinarily the membership of a Junior Safety Council includes two representatives from each room. These representatives are elected by their classmates for a specified term. They report the council's action to the home rooms, and in turn refer to the council special home room problems.

It is advisable to have an interested teacher act as sponsor of the Junior Safety Council, guiding and directing its activities. A program committee plans a definite series of meetings, sometimes inviting outside speakers, and arranging assembly programs. The school boy patrol committee is concerned with safeguarding pupils at street intersections, on the playgrounds, in halls and on stairways. The accident reporting committee collects and summarizes reports from the various rooms. The inspection committee makes systematic examinations of buildings and grounds to keep them free of all hazards. There is also a publicity committee, and others are appointed as special

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activities are undertaken. These may include drives or campaigns, demonstrations of life saving and first aid, exhibits, excursions, radio talks, the publication of a safety magazine or newspaper and other things.

Whether or not there is a Junior Safety Council, children enjoy organizing a safety club in the classroom with committees corresponding to those just mentioned. A library committee may arrange lists of books and pamphlets, supply material for the reading table, keep a safety bulletin board up to date and collect posters and other illustrative material. The teacher will find that the classroom safety club offers many opportunities to supplement the regular safety instruction program.

In the high school there are also many interesting possibilities. The outstanding development in this field during the past two or three years has been the organization of courses and clubs for instruction in good driving. Young drivers have a high accident record. They readily acquire mechanical skill but are often lacking in judgment, adequate knowledge of the rules of the road and a proper attitude toward highway safety. A large number of states are now developing courses of study in this subject, and much good material is already available.

The high school home room periods may be utilized for the integration of safety materials, particularly in the social sciences, civics, health, English and general science. Activity programs, similar to those outlined for the elementary school, are also being carried on most successfully.

To summarize some of the activities which may well be initiated during September, either in elementary or secondary schools:

1. Arrange for a systematic reporting of all student accidents.
2. Check the safety reference material in the school library or classroom to make sure it is up-to-date.
3. Arrange for the protection of child pedestrians at school intersections, also for pupils using the school bus. Plan safe routes to school.
4. Make a thorough inspection of school building and grounds and remove all accident hazards.
5. Organize a Junior Safety Council or other safety club through which an activity program may function successfully.

ART IN THE SERVICE OF GOOD HEALTH

The Art Teacher Looks at Health

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The wise teacher makes use of every subject in her health teaching. Among those subjects none has greater possibilities than art. In this introductory article Miss Whittier paves the way for a series of practical articles on teaching health through art.

Quotation from the notebook of a teacher of art.

"Which shall it be?

"The grade teacher looked at me and I looked at her."

That sketches the situation as it often appears in these days of integrated programs.

Is art still to be the frosting on the cake, or has it something to contribute as a necessary health giving ingredient in the staves of life? In attempting to answer this let us consider three things.

(Continued on page 862)

QUESTIONS AND ANSWERS

Hay Fever

To the Editor:—Each year I have hay fever badly, usually from August 15 to September 5. I am almost positive that it is caused by the pollen of ragweeds. I have been free of it and then had it develop all at once when going to a farm where there was lots of ragweed in bloom. I cannot afford to go north during the season, and thereby prevent the attack. I should like to know if there are any preventive measures I can take in Cincinnati which are reliable and not harmful to a heart which is not strong. Last year I took two shots during the attack. The first one seemed to have no effect whatever, but the second worked like a miracle. Do you believe these shots if taken now in advance of the attack would be effective? Do nose and throat specialists here have any success in treating in advance of the season to prevent the disease?

L. K., Ohio.

Answer.—Taking two injections is only a start. It is very doubtful whether the second injection had any great influence. Even during the season, hay fever varies in severity with conditions of wind or of atmospheric pressure, and this may have been the cause of the improvement. As a general rule, it requires a fairly long series of injections. These are best started by sufferers from fall hay fever, early in the spring about March or April.

Even if it is too late to get an early start, it might be advisable to start now, though it would not be nearly as effective. We cannot predict in an individual case how effective the treatment will be. In general, we may say that 70 per cent or more of hay fever patients get relief. This is a conservative estimate.

Hay fever patients are made worse by abnormalities of the nose which interfere with breathing or with free drainage of nasal secretions. Often, therefore, it is advantageous to take treatment both by injections and by local treatment of the nose and throat. This may require seeing two physicians. Appropriate treatment of the nose and throat locally may have advantages, both in advance of the season and during the season. If there is any operative work to be done, it would have to be done in advance of the active hay fever season.

Thickening of the Eustachian Tube

To the Editor:—What is the cause of thickening of the eustachian tube? The first symptom of any ear trouble was a severe ringing and hissing noise in the right ear. I have been taking treatments for this condition, which consist chiefly of inflating this tube. Does this condition lead to deafness? What is the medical term for it?

A. J. F., Ohio.

Answer.—A great deal more information concerning the case should be had before much advice can be given. The medical term for the condition described is chronic catarrhal otitis media, but there are several other conditions simulating this disease which make it necessary that a reliable otologist be consulted.

When one considers that the eustachian tube and the middle ear are merely extensions of the nasopharynx, it logically follows that the congestion or catarrh in these structures is due to some disorder in the nose, throat or nasal sinuses. Therefore a thorough examination should be made.

Thickening of the eustachian tube means an increase in the thickness of the walls of the tube. This causes inadequate ventilation of the middle ear and gives rise to the symptoms mentioned. Tubal inflations are for the purpose of enlarging the diameter of the tube.

If the present degree of deafness is not marked, progression is not likely to occur, provided proper treatment is obtained. On the other hand, neglect of the condition is apt to lead to a marked deafness.

Cataract Caused by Dinitrophenol

To the Editor:—Will you kindly give me any data you may have on treatment for cataracts caused by use of dinitrophenol capsules for weight reduction.

C. B. G., Michigan.

Answer.—It is only a year since it was recognized that in human beings dinitrophenol was likely to cause cataract. The only sure remedy is not to take dinitrophenol. To be sure of this, you have to avoid giving or taking drugs for weight reduction, and fall back on diet and exercise to keep down weight. Dinitrophenol is rapidly acquiring a bad reputation for causing cataract. So people will not take it under that name. But under any other name it will be just as dangerous, and scores or names can be invented for weight reducers in which it can be used, and thus sold like other "patent medicines."

If the inquirer should unwisely decide to try nitrophenol, or some proprietary medicine that may contain it; and later think better of it and stop taking it, the cataract may still come on. Dinitrophenol seems to injure the capsule of the crystalline lens, or the epithelium just under the capsule; and after that, the opacity of the lens begins, which forms a cataract. Dinitrophenol has been tried on rabbits and dogs without causing cataract. But enough human beings have tried it to make sure that it is likely to cause cataract in them, even in early life; and often the cataract comes on and increases very rapidly.

Skin Grafting

To the Editor:—Can pock marks or acne scars be eradicated by means of skin grafting? Thank you for the information.

S. V. T., Iowa.

Answer.—Under certain conditions, pock marks or acne scars can be eradicated by means of skin grafting. Such a procedure, however, is difficult, tedious, painful, costly and not free from the lia-

bility of making a bad matter worse.

Unless pock marks or acne scars are exceedingly disfiguring, it is usually better to let them alone. A competent surgeon should be sought with the aid of your family physician.

Advertising doctors should be avoided. All preparations to be applied to the skin for the purpose of eradicating scars are either dangerous or useless.

Spray Containing Caustic Soda

To the Editor:—A railroad is spraying its engines, preparatory to repairs, with a solution containing a large quantity of caustic soda. It is sprayed on with steam and air pressure. This vapor becomes so thick among the workers that it is difficult for them to breathe, and as a result a form of chronic sore throat and irritated mucous membrane has developed among a number of the workers. A rumor has been spread to the effect that cancer of the throat among railroad workers has increased. Is this true? The road has failed to comply with our requests or suggestions, with the remark that "this solution can be put in your eyes without hurting you." We found that a particle of this placed upon the back of the hand would begin to burn a blister within thirty seconds. I will greatly appreciate any information and advice that you could give me in this matter.

J. F. B., Virginia.

Answer.—Previous experience with use of caustic soda solutions does not indicate that exposure to such vapors produces injury except externally to the skin and the visible mucous membranes, particularly the conjunctiva of the eye.

As far as the figures are available, there is no evidence that cancer of the throat is on the increase among railroad workers, although better reporting of cases of cancer has shown that all kinds of cancer have been on the increase within recent years. Earlier and better diagnostic methods have also had their effects in this apparent increase.

There is no doubt that this solution has a caustic effect, if your experience has been reported accurately. It means that the caustic effect is noted externally. Would it not be good practice to suggest that the employees so exposed be provided with some approved type of respiratory protective device, failing to get the employer to change the chemical constituents of the spraying solution?

The above information is written in answer to the inquiry without knowing the amount of caustic soda vapor in the air breathed by employees or the exact chemical constituents of the spraying compound. It might be advisable to get more exact information concerning these exposure data, before making any further general suggestions regarding a remedy.

Dementia Praecox

To the Editor:—I have written to the Rockefeller Institute and I have been referred to you for answers to the following questions: 1. Is the classification of some mental cases as "dementia praecox" obsolete? 2. What percent of mental patients throughout this country is considered curable, when physical examinations show "no cause"? 3. Are state hospitals more effective in treatment than private ones in curing mental disorders?

V. L. M., Texas.

Answer.—1. The term dementia praecox was coined by Kraepelin to cover various psychiatric conditions hitherto considered to be unrelated, but having in common, according to this author, the tendency to become progressively worse, the so-called deterioration; and the fact that the conditions are primarily diseases of puberty and early adulthood. The name itself means early deterioration. Subsequent investigations, however, show that by no means all of the cases classified under this name were incurable, and that furthermore the illness need not necessarily occur at an early age. Bleuler therefore proposed to discard the term dementia praecox as misleading, and used in its place the name schizophrenia, literally "split mind." With this term he wished to call attention to the bizarreness and incongruities shown by these patients, the so-called dissociation. The change in terminology has been accepted by the great majority of psychiatrists, although in some institutions, particularly some state hospitals, the old name still is used. In this country many psychiatrists prefer to speak of "schizophrenic reaction types" (Adolf Meyer) rather than of schizophrenia, in order to make clear that one is dealing not with a disease entity but rather with a mode of reaction. In some places the term dementia praecox is used to denote those cases which show definite "classical" deterioration. It is, however, preferable to avoid confusion by calling these cases deteriorating schizophrenias. Therefore, the term dementia praecox, while not actually obsolete, is superfluous and should be avoided.

2. Statistics as to the curability of mental disorders vary greatly. Excluding the organic and toxic reaction types, as is implied in the question, and including the psychoneuroses, it can be stated that approximately one third of mental disorders seen in general and hospital practice recover, another third show marked improvement, and the remaining third remain unchanged or become worse.

3. The efficacy of treatment depends entirely upon the methods and personnel of the individual institution, and both private and state hospitals are to be found among the leaders in this field. General statistics are of no value as a means of comparison, since the type of cases seen may vary greatly according to the function of the institution.

If you have a question relating to health, write to "Questions and Answers," Hygeia, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Coronary Thrombosis and Gun Shot Wound

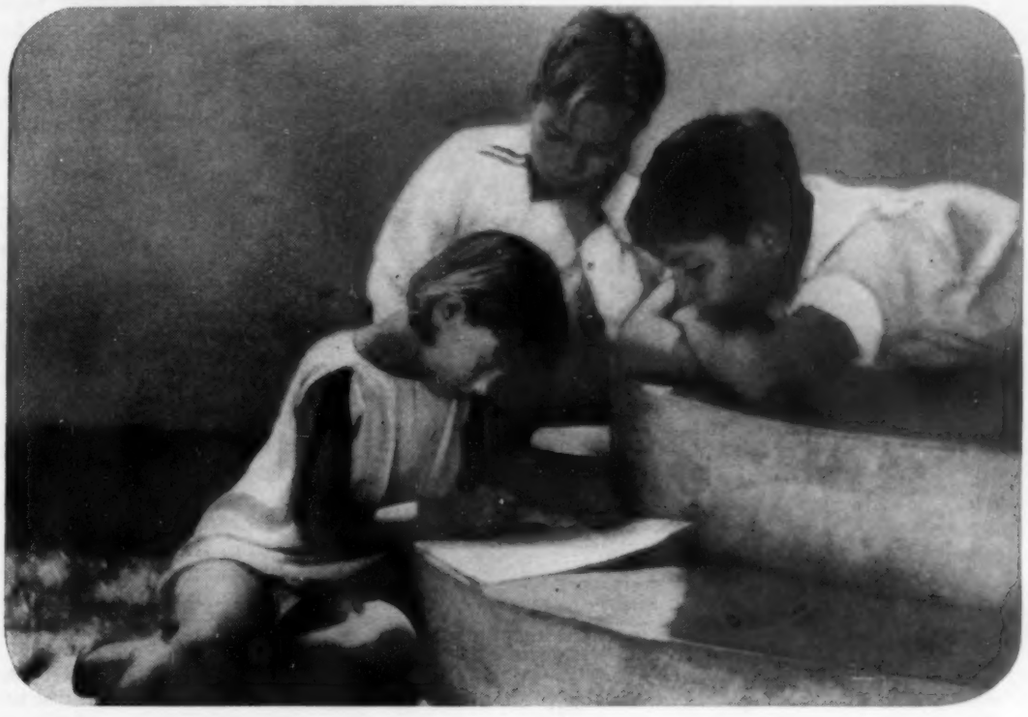
To the Editor:—1. If a man died suddenly of coronary thrombosis and was shot through the shoulder ten or twenty minutes later, would it be possible to determine at autopsy, beyond any question, that it was the heart attack that killed him and not the bullet wound? 2. Would the manner of his death be apparent without autopsy? 3. Would such a wound made ten to twenty minutes after death still bleed freely?

E. B. D., New York.

Answer.—1. Yes. In death from coronary thrombosis, an autopsy would show not only the plugged artery but also an anemic condition of at least a part of the heart muscle supplied by that artery. The other tissues of the body would be engorged due to an excessively high content of blood. A gunshot wound of the shoulder would probably not have a fatal outcome unless the bullet happened to strike the subclavian or suprascapular arteries. Even in that instance, a contused wound of the artery might not result in serious hemorrhage. If death resulted from the gunshot wound, one would not only fail to find the plugged coronary vessel but would observe a marked anemia of all the other tissues, particularly those supplied by the perforated artery.

2. No. One could not determine the cause of death with certainty unless an autopsy were performed.

3. No. There might be some seepage of blood but no real hemorrhage.



IF THESE CHILDREN HAD BEEN BORN IN 1789

. . . they would probably have died at 35!

LIFE expectancy in 1789 was only 35 years . . . Now it is 61 years. Modern medical science through preventive measures has largely contributed these 26 years to the average span of life.

And more years can be added by closer cooperation of the individual with the family physician. For periodic physical examinations provide information that is essential in preventing sickness, guarding health, and prolonging life.

Now, before cold weather comes, is a most appropriate time for every one to check up on his physical condition. Especially is this important for the children with the beginning of school.

The teeth, the sinuses, and the lungs particularly need thorough, periodic inspection. For they are the most common seats of infection that can have far-reaching effects. To be certain of their condition, x-ray examination is essential.

The value of periodic physical examinations and the x-rays in guarding health are told in "X-rays and Health." A copy will be sent to you, free, if you mail this coupon.

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How Good Are Your Child's Eyes?

Being taught to play the "E" game

Children think of it as a good game and readily respond when asked to show which way the legs of the "funny little 'E' animal" point. Up, down or sidewise go their arms. In this way, boys and girls, before they know their letters, indicate fairly accurately how well they can see.

SCHOOL work means years of hard use for young eyes. Backwardness in school is frequently the result of defective eyesight. Before children go to school make sure their eyes are fit for study.

Modern eyesight tests are of great importance in demonstrating whether a child's eyes are fit to assume this strain. Many kindergartens are using the "E" Chart supplied by the National Society for the Prevention of Blindness to discover gross defects of vision.

Eye troubles are usually due to faults in the structure of the eye, to disease either in the eye or in other parts of the body, to some deficiency in the diet, to strain, or to improper use of the eyes. Eyes need special attention during and following serious illness.

Some visual defects may grow progressively worse if nothing is done to correct them. It is no use hoping that children will *outgrow* "cross-eye." But corrective measures save thousands of boys and girls yearly from becoming permanently cross-eyed.

Astigmatism, farsightedness, or nearsightedness can usually be corrected by glasses. Diseases of the eyes require special medical treatment.

Food plays an essential part in keeping eyes healthy. Of special importance to the health of the eyes are foods which contain Vitamin A, such as cream, butter, milk and fish oils.

Take no chances with vision by trying to fit your child with glasses, or by relying on home treatment. Eyes are too precious. Consult a specialist. Attention to the eyes should always be a part of regular health examinations.

The Metropolitan will be glad to send you, free, a booklet, "Care of the Eyes." It contains valuable information that you should have. Address Booklet Department 936-Z.

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HOME STUDY

(Continued from page 812)

in five minutes by a classmate. The hour spent apparently in vain may not be altogether wasted, but unfortunately it has to be dearly paid for in work undone which some teacher will require. The moral effect of failure must also be taken into account. Another matter connected with home work, which parents become acutely aware of is the unevenness of its distribution."

Dr. Carr a medical officer of the Derbyshire schools remarks, "It is the curse of the competitive age that the weaker vessels are expected to achieve as much as the stronger. It is quite true that many pupils spend a large amount of time over home work and are none the worse for it. Others definitely become fagged and overtired. They suffer from weakness of the muscles of accommodation and retinal fatigue. Too often it is forgotten that the eyes are not mere optical instruments, but organs of flesh and blood subject to the defects of their anatomy and physiology, and forming a part of a living whole which itself exerts a profound influence for good or ill upon them. The subject of home study has never received the attention it deserves."

The Associations of Assistant Masters and Assistant Mistresses in English schools recently attempted a questionnaire investigation on the "vexatious" subject. "One fact emerges at once from the figures obtained," namely, "the wide divergence of practices in different schools." In some, more home work is expected in week ends while in others it is reduced. The total hours a week for school and home work for students of 11 ranged from twenty-seven to forty-one; for those from 18 to 19 years, from thirty-three to fifty. "The maximum in this case," remarks W. H. Barber, a former head master, writing in the *Journal of Education* (May 1932), "seems to be a long working week, which cannot leave very much leisure."

The questions asked and the replies received are much the same as those of the New York City study. The correspondents were nearly equally divided on the effects of home work on the development of natural abilities. There were 177 who considered it a hindrance and 173 who did not think it has an appreciable effect in this direction. One says, "A boy who does home work efficiently has no time or energy (save in exceptional cases) to develop any outside activity." Another writes, "The really capable boys can as a rule do their work quickly to get time for useful

past times, etc. The less capable (i. e., 80 per cent in many cases) are equally incapable of finding for themselves suitable occupations. . . . The finding of suitable forms of exercise and amusement, apart from games, is so difficult that the compulsion of home work is a godsend." The last correspondent inserted wisely the expression "as a rule" in his first sentence, and the second sentence would also be the better for such limitation.

As to when home work should have its formal beginning, one educator says not before the child has reached the third grade, and this is the policy of the Philadelphia schools. The New York school committee would not have it introduced until the fourth grade. Two writers on the subject would not begin it until the fifth grade. The White House Conference recommended its elimination in the elementary school. As already mentioned, assigned home study for grades 1 to 8 has been abandoned in the schools of Los Angeles.

The following is the recommendation of the State Department of Public Instruction of Pennsylvania in its "Course of Study and Handbook of Organization" for one-teacher elementary schools:

> In primary grades, home study should not be necessary. After the child has acquired the art of reading he should be permitted of his own choice to take books home and return them as he chooses to do. If any home study is assigned in the intermediate grades it ought to be very limited. It should deal with such informational subjects as history and geography, and the pupil should not be held responsible the next day for having done a definite amount of work. He should be urged to read in these branches, after he can read to advantage. Where departmental teaching is the plan, teachers need to be especially cautious lest the pupils be overburdened with assignments for home work.

Authorities do not always agree, but the following subjects have been mentioned by some of them as suitable for home work: spelling, history, composition in English and reading. As unsuitable, mathematics is mentioned by two writers, and one states that "history can be most abused by awkward methods."

Home conditions are to be taken into account for "no one can be expected to do good work in a bedlam of noise." The following suggestions were made:

> Only work that can be done without help of parents, should be assigned.

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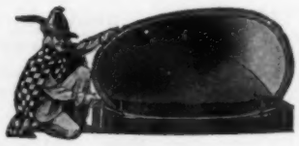

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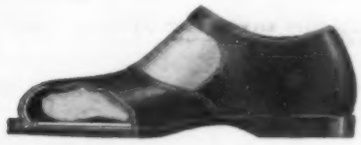

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Home study should be made a privilege.

It should not be too difficult.

Assignments should be made according to capacity and individual needs and for variety in subsequent class work.

Work should be regular in amount from day to day.

Work should be expected on Friday but not over the week end.

Half the time should be devoted to written work.

Assignments should be made when the class is alert, and not in the clamor of the last moments of the period.

Methods of study should be explained in detail and individually.

Home reading should be encouraged.

Home work should never be assigned as punishment.

Written home work which has been brought in by pupils should invariably receive the attention of the teacher. Where possible, it should be made of use during the recitation period.

It may be possible to vary home assignments even among pupils in the same class so as to meet individual needs. Principals and teachers should experiment along this line.

The character and amount of home work, both written and studied, should vary according to neighborhood demands and home conditions. Where parents desire assignments, and home conditions are favorable, longer assignments may be made than where conditions are not favorable.

Home work should be made different from the type of activity carried on *in* school. That is, if children study a certain multiplication table *in* school, their homework might consist of exercising originality in seeing how many ways to use that skill. The same principle is often emphasized by urging that children engaged in active types of home work such as building, drawing, modeling, collecting, etc.

There can be little doubt that home study is not undesirable provided (1) that the home is healthful and reasonably quiet; (2) that the study imposed is not excessive in amount (requiring so much time as to prevent sufficient leisure for active things); (3) that it is not too exacting in nature, and (4) that the child knows what he is to do and how to do it. We try to make work in school suitable for the individual. Why should it be otherwise with home work? Certainly

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children cannot be expected to be alike when it comes to home work when they are not alike in work at school. It comes back to the matter of knowing the individual child and his possibilities. If the teacher derives pleasure in assigning exacting tasks, as sometimes seems the case, he might at least make them merely a privilege for those who wish to exercise their mental powers. No one expects either beast or man to profit physically or mentally from work that he cannot do without excessive fatigue and worry or that he cannot do at all.

In brief, one may expect and must expect either injury to health or the exhibition of self protective traits if the home work is either excessive or unsuitable, and there goes along with these results a waste of time which might be spent more educationally.

Because of poor home conditions or because of the need for personal attention there can be no doubt that many pupils would do better work in school than at home. If the school is really ambitious that such students accomplish all that would be possible under more favorable conditions, the lengthened day or special supervision should be forthcoming for those who need it and especially for those who desire it. As with other school work, home study ought never be harmful for any but helpful and healthful for all. It should be so handled that it will not deserve to be called a "big, bad wolf" by educators, parents or pupils.

PSYCHOLOGY OF VISION PLAYS PART IN DRIVING

Can you accurately judge the speed and relative distance of the motorist whose car is rapidly approaching yours on the highway? A surprisingly small number of people can do this, according to T. W. Forbes who writes in the *Sight Saving Review* on "Accidents in Traffic and Industry as Related to the Psychology of Vision."

There are many phases of vision and wide differences in vision in medically normal eyes which affect the behavior of drivers and of industrial workers. The first factor discussed is the influence of narrowed peripheral vision which allows the driver to see only that which is directly in front of him and a little to either side. The function of the periphery of the retina seems to be to cause a reflex turning of the head in the direction of the objects seen. This allows focusing of the central part of the retina, with its greater acuity, on the object. It has long been known that there is a greater

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HERE'S A GAME—WE'RE ALL GOING TO PLAY IT!—AND HERE'S A CHART FOR EACH OF US!
GIVE ME MINE FIRST, MOTHER!
BET I BEAT!
GIMME, MAMA!
A MONTH LATER AT THE JONES'S
I GET 100%
MY RECORD'S PERFECT, TOO!
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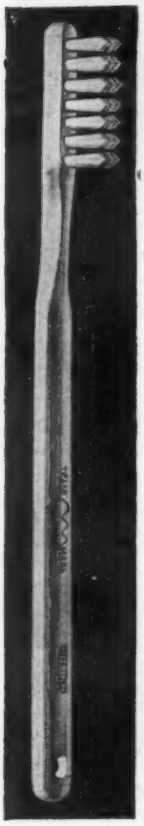

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sensitivity for the seeing of moving objects in the edge of the visual field, and it has been shown that when a person is asked to respond as quickly as possible with his hand after seeing an object he responds quicker when it is on the edge.

It has also been shown by actual experiments that the best drivers do not rely on "seeing out of the corner of the eye" but do actually turn their heads continuously and rapidly back and forth. They therefore bring into clear focus a very wide area in front of them. It is thus possible for a person to overcome, to some extent at least, the handicap of a slight narrowing of his field of vision.

Visual attention is a psychological factor which must be reckoned with since it is quite possible for a person with perfect eyesight to be effectively blind, due to concentration of his attention on some portion of the visual field. With such fixed concentration present, a person will not be able to report other objects which he would otherwise undoubtedly see.

Of course myopia, or nearsightedness, and color blindness are two important considerations. The former can be corrected by a trip to an oculist, and the latter alleviated by study of the relative degrees of intensity or brightness of the traffic signal colors, which is easily perceptible to them.

Another extremely important psychological response which is definitely dependent on vision is the recognition of objects, the judgment of their distance away and their speed and direction. Such recognition and judgment in daylight depend on the visual impression of changing shape and size of the object or vehicle, changing shadows, the visual disparity or difference in the pictures obtained by the two eyes and seeing the object or vehicle pass other objects.

In poor illumination such judgments are hampered by the loss of distinct outlines of shape and size and the loss of the effect from shadows. Dimness of objects is associated with distance. Veterans on the sea and railroads know this fact and are suspicious of their judgments under bad weather conditions. The ordinary auto driver, however, is not likely to be familiar with this effect and to be fooled by it, especially at night.

Temporary blindness can result from the glare of bright lights at night. Some people are able to see practically nothing when faced with a bright light, except what is illuminated by that same light; while to others it is a decided aid to their driving.

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THE MARTIN FAMILY VACATION

(Continued from page 840)

AUNT MARGARET: And you spoil him.

MRS. MARTIN: Just as you spoil George.

AUNT MARGARET *(laughing)*: Well, maybe. How's the pump, John?

MR. MARTIN: Getting tougher every minute.

MRS. MARTIN: Well, you can stop in just a minute. Give me the bottle, Margaret. See? You fill it three-quarters full; then you cork it, and now all you have to do is keep it on ice until George can run up to the county seat with it tomorrow and take it to the laboratory.

MR. MARTIN: Oh, boy, my back!

AUNT MARGARET: H'm. Serves you right. Anybody'd lived here as long as you did before you married, and didn't know enough to hitch the pump up to the windmill, ought to have a sore back.

MR. MARTIN: Oh, good night, I forgot all about the windmill.

MRS. MARTIN: If I had known about it—

AUNT MARGARET: You'd have kept still, if you had any sense. John never did know how to use his head for anything besides a hat-rack.

MR. MARTIN: Now, look here, Peg, you're not too old to be ducked, even if your hair is white and your children are grown up.

AUNT MARGARET: Maybe not, but I'd just like to have a moving picture of you doing it, I would that!

MRS. MARTIN: Oh, oh, oh! Is it any wonder our children argue all the time, with the ancestry they have on their father's side?

AUNT MARGARET: Yes, we're all alike, we Martins. We talk tough, but we've got kind hearts. Now we've got the water ready, I wonder how soon we'll hear from it?

MRS. MARTIN: If it goes up tomorrow it'll take two days to finish the examination—that's what they told me one time when I had some examined from a summer cottage well.

AUNT MARGARET: Do I have to go on boiling water for two more days?

MRS. MARTIN: At least. Hello, what's this?

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LONG, LONG HOURS *of this*

THE benefits your child derives from a fine school health program are minimized if he is compelled to spend long hours in antiquated, ill-designed school seats . . . seats of the kind that cramp vital organs, retard their functioning, strain eyes, and violate health principles.

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That is why parents are cooperating with educators who desire to provide pupils with American Universal Better-Sight Desks . . . a type of school seat which induces good habits of posture and minimizes eyestrain.

We suggest that you allow us to inform you further concerning the relation of school seating to your child's mental and physical progress. Just mail the coupon.

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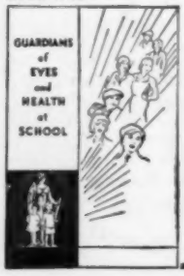

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American Seating Company (H-9)
Grand Rapids, Michigan

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FREE PAMPHLET

GEORGE *(breathlessly)*: Come on out in front. Hurry up!

MARY: Yeah, come on, drop everything.

MRS. MARTIN: What under the sun has happened?

MR. MARTIN: What's up, you crazy youngsters?

GEORGE: Come on, don't stand there and talk. Come on and see.

MARY: He's got a whole string of fish—

AUNT MARGARET: Who's got a whole string of fish?

MARY: It's Uncle George. Come on, everybody.

CLOSING ANNOUNCEMENT: STATION ANNOUNCER:

And so they've got the well water gathered ready for examination, and Uncle George is back from his fishing trip unexpectedly—and he actually has fish. Tune in again . . . at . . . for another radio episode, and see what happens.

MUSIC

CHIMES

[* Sound Effects: The sound of an automobile engine may be simulated by a very quiet electric fan close to the microphone and a little to one side. A noisy fan will sound like an airplane, not an automobile engine. Sometimes removing two of the blades, directly opposite one another, will improve the sound. If there is recording in the studio forget about the fan. A real horn sounds just like a real horn through the loud speaker.

The best representation of a door closing is the actual closing of a real door. A book slapped down flat on a table will serve, if necessary, the force of the blow being gaged according to the distance from the microphone and the loudness of the effect desired. Do not drop it too close to the microphone. All sudden noises near the microphone are taboo, if one would avoid the annoying vibratory phenomenon known as "crashing the mike," which needs no further description. Even the control operator cannot act quickly enough to keep sudden loud noises off the air.

A squeaking pump handle can be simulated most excruciatingly with a flat sheet of metal over which the end of a file is scratched back and forth rhythmically. This must be kept far enough away from the microphone. A handle that does not squeak but merely makes a regular clink-clank can be imitated with a small postal scale of the counterweight type close to the microphone. Regularly pressing down and then releasing the platform of the scale gives the desired sound. A spring scale, of course, is useless.

Water from a pump can be simulated by means of a basin of water and a glass. Filling the glass and pouring the water back produces the sound. It should be fairly close to the microphone. Of course it must be timed with the sound of the pump handle. It takes one person for each effect, and they should be well rehearsed before going on the air.]

(To be concluded)

Remarkable New Type Garments

Your child's first lesson in *self-reliance* is *self-dressing*. You can teach him quickly, easily, this simple way—

IF you keep on dressing your child when he should be learning to dress himself, you may be forming a habit of dependence upon others that he will never quite overcome. So say leading child psychologists and educators.

Vanta will help you. Originated by Vanta, SELF-HELP undergarments are designed to teach children to dress themselves when only two years old. They make a happy game of dressing—a game that the child looks forward to each day. But an *important* game that teaches him to *think* for himself, *act* for himself, *do* for himself. A self-reliant, resourceful, independent character in the making.

In exactly the same place on the *outside* and *front* of each Vanta SELF-HELP Garment is an attractive Red Heart label. This bright red label catches the child's eye and he quickly learns when his garments are *right side out*, and which is *front*, and *back*.

Fastenings are always in front. Buttons are in plain sight and buttonholes are large enough for chubby little fingers. In brief, every SELF-HELP Garment is designed to *encourage* and *help* your child to help himself.

See Vanta SELF-HELP Garments in the Infants' Department of your favorite store, or write us immediately if you fail to find the garments you desire. Look for Vanta's Red Heart label—"The Sign of the Heart." This famous label is your child's first guiding mark to independence . . . your own key to precious hours saved for recreation!

Send 10c for "The Toddler," 34 pages of training, feeding and health helps for mothers of children from 2 to 12. Send coupon today.

Vanta Baby Garments

EARNSHAW KNITTING CO., Dept. H-936, Newton, Mass. Enclosed find 10c. Please send me copy "THE TODDLER"

Name.....

Address.....

YOUTH NEEDS TO BELIEVE IN ITSELF

(Continued from page 779)

get. What you do have—be glad of every day of your life."

She had caught the idea perfectly.

A minimum of attention to liabilities and a maximum of emphasis on potentialities for success is what these young people need. Many of them are suffering from an inferiority feeling that hampers the use of whatever strength they have. Being unsure of themselves they are afraid to try many things in which their capacities would, if not paralyzed by fear, bring success.

One fear-bound young girl I know had such a habit of emphasizing her liabilities in her own mind that when I asked her to write me a list of her assets she returned the next day with only three. She was "pretty healthy, didn't get the blues as some girls do, and hadn't flunked any courses last winter." She had tried to think of others but could not seem to find any. Here was a good looking girl with excellent health, a college education, a wide appreciation of art, music and poetry, a lively imagination with which she met children skilfully—well, I named a list of a dozen or more assets for her without stopping to think even a minute. But her habit of depreciating her ablity was so ingrained that she could not even think what assets were, much less what hers were.

I find this blocking of an honest evaluation of assets in most young people. We have trained them to it. Throughout childhood we have taught them not to boast. Parents, teachers, comrades all frown on the braggart so severely that the child comes to think that any appreciation of self is undesirable. Even parents who praise children constantly do not encourgae those children to praise themselves. Such an attitude toward self appreciation is doubtless right. Young children are natural egotists. A becoming humility is necessary and must be developed before arrogance becomes ingrained. But we have as a nation somehow failed to strike the happy medium where the child learns a humility that is not timidity, a self assurance that is not arrogance. Most of our young people cannot without a stammering apology name their desirable qualities, nor can they without a tone of defiance list their weaknesses. We have not taught them a quiet and objective evaluation of themselves.

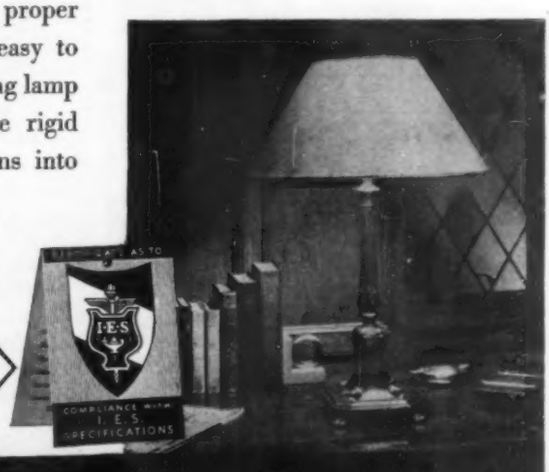
There is another reason, too, why these youngsters have diffi-

A SMARTER STYLE IN *Better Sight*

● Now it's *doubly* smart to give your eyes better light. You'll agree the instant you see the beautiful new I. E. S. Better Sight Lamps.

These remarkable lamps were designed by the famous Illuminating Engineering Society to make proper light for study and reading easy to obtain. Now the nation's leading lamp designers have combined the rigid fifty-four I. E. S. specifications into floor, table and wall lamps of the smartest styles.

I. E. S. Better Sight Lamps give *more* light than the ordinary lamp . . . and it is glareless! See them at your dealer's. For an interesting booklet, entitled "Help for your Eyes," write Westinghouse Lamp Co., Dept. H-9, 150 Broadway, New York, N. Y.



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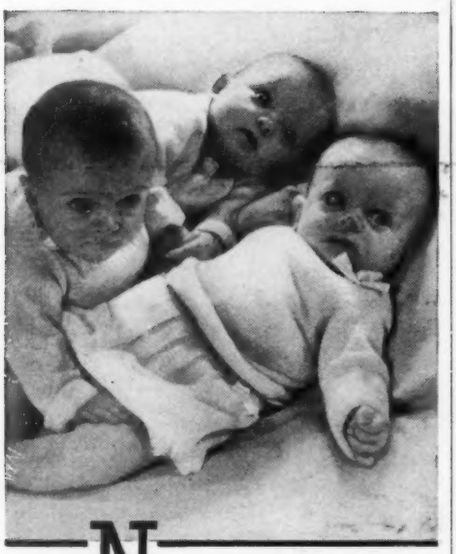

No scratchy woolens for these TRIPLETS

Lillian, Patricia and Evelyn owe their mother a vote of thanks. Their handed-down woolens are just as fluffy as new, because they've always been washed in Lux!

"I always used Lux for the older children's baby things just as I do now for the triplets'," says their mother. "Harsh soaps are apt to leave alkali in baby garments that irritates tender little skins."

Wise mothers everywhere insist on Lux to guard against chafing, to keep woolies soft, unshrunken. Safe in water, safe in Lux.

LUX

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—HYGEIA

● PARTIAL CONTENTS ●

The Art of Love
Sex Life of Unmarried Adults
Sex in Marriage
Sexual Adjustments
Sexual Variations and Abnormalities
Substitutes for Sex
Age and the Sexual Impulse

Emerson Books, Inc., Dept. 539-H, 333 Sixth Ave., N.Y.C.

culty in facing themselves honestly. We have held them to such an uncompromising standard of success that unless they excel all others in a given quality they consider themselves as inferior in that quality. We have taught them this through competitions at school, through constant comparisons with others at home. As a nation our pattern of excellence is excellence *over others;* we have slight appreciation of what it means to excel *within ourselves.* Our idea of improvement is to beat some one else; it is seldom to beat our own past record.

We are ambitious, and our ambition has led us into blindness because it has been the wrong kind of ambition. We do not, as a group, accept whatever gifts life has seen fit to give us, feeling a sense of obligation to use these gifts as best we may to better our lives and the lives of those about us. Our young people, copying the pattern we have set for ourselves as well as for them, are discontent unless they are conspicuously outstanding. We have trained them to feel that the only success worthy of the name lies in playing a stellar rôle. We have done little to make them realize that the best success usually lies in developing to the fullest use whatever little talents we may possess and in occupying well that little niche assigned to us by life.

The result is that when we ask them to evaluate themselves they cannot see anything of worth unless each thing they look at is an outstanding gift. And so, the girl of whom I spoke could not see her fine intelligence because she was not on the honor list; she could not see her appreciation of music or poetry because she could not play or write well enough to win mention in the school papers or a place on school programs; nor could she see her other good qualities because none was so exceptional as to win a special rating above her fellows.

Even when these youngsters are outstanding in one or two traits they are often not content. One brilliant and especially charming boy of my acquaintance is an example of this. At the top of his group academically and surrounded on all sides by evidences of his unusual social success he is only average in physical vigor and unable to star in athletics. He wastes a great deal of emotional energy cursing the inadequacies of his body. I have never once heard him give thanks for his brain, his looks or the home training which produced his social charm. To me this lad and all those like him commit a serious sin against life. More than that, their concentration on discontent over their liabilities, their failure to see and deeply appreciate their assets is not only a sin but an essential danger to mental health as well.

It is probably this waste of emotional energy in a nonconstructive direction which most disturbs the psychologist. It is not that most of these youngsters will ever become insane. Far from it. The important thing is the unnecessary waste of the tremendous potentialities of youth which results when the small group of the too-sure-of-themselves trip blithely through life failing to recognize or to correct their mistakes and when the large group of afraid-of-themselves go despairingly about leaving much of the work of the world undone for lack of courage to try. If both groups could learn what the essential values in life are and could develop in themselves a genuine desire to aline their own capacities with these values, they could then give to life the maximum of benefit and therefore gain from life the maximum of happiness.

SNAKES CANNOT STRIKE AS FAR AS OWN LENGTH

How far can poisonous snakes strike? About one-half to three-fourths their length, says the U. S. Bureau of Biological Survey. The greater distance is rarely reached even during times of extreme excitement, and the longer strokes have little accuracy. It is commonly believed that they strike their full length or greater distances.

In striking at an object a snake simply straightens out the S-shaped curves in its body with great speed. When coiled, it uncoils about half of the front part of its body and hurls that part forward from a looped position. The western diamondback rattlesnake when excited frequently raises its head ten to fifteen inches above the ground. From this position it strikes sideways and downward.

Poisonous snakes often misjudge distance in striking at objects. Venom flying from their fangs, when they strike at objects beyond their reach accounts for stories of American snakes spitting poison. An African species really does this.

Reports of persons bitten by venomous snakes indicate that in most cases the victims were bitten on the legs or feet. High topped boots or heavy leggings therefore are an efficient safeguard against most attempts of snakes to bite.

"MOTHER KNOWS BEST"—DOES SHE?

There was once a time when it was generally believed that Mother knew best. Children's literature bristled with ingenious tales of little boys and girls who obeyed their mothers and received all the ponies and ice cream. The humble and often helpless attitude of parents before their "modern children," is one of the phenomena of this age, declares *Scribner's* magazine.

A number of things have contributed to this state of affairs. For one thing extraordinary changes have taken place in the field of education. The teacher is decidedly different from the palpitating spinster of yesteryear. The Sunday schools preach and emphasize satisfactory adjustments as against blind obedience to hearsay. The family doctor gradually gives way to an array of specialists. Even Father is inclined to say only, "Go on, honey, do as your mother wants."

Mother might ask herself a few questions: How much energy has she put into understanding the modern theories of education? What importance, if any, does the church have in her daily life? Why should fathers of the present generation shy away from the old position of solidly backing Mother on all occasions? Exactly what is it she wants from her children, after all?

First of all it is the wise parent who does not confuse lack of discipline with tolerance. Tolerance, moreover, works both ways. Mother and the whole family can pool experiences and keep abreast of the times and of each other. It takes all the sensitiveness and tact in the world to keep the channels of communication open between parents and children.

Vocationally, for the majority of adolescents the future is a maze. The sense of vocation is a slow growth. It should not be hurried. Few persons conceive in youth the idea that inflames the life of the great. A calling is largely the result of chance and accident. Where wealth and influence are lacking, the job usually determines the vocation. Hence the wisdom of that type of education that fits us to do the things we have never learned to do or have never done before.
—*Child Study.*

Tell me how a people uses its leisure and I will tell you the quality of its civilization.
—*Maeterlinck.*

Your Longer

SPAN OF LIFE

—is but one of the miracles of modern science—the science that has heaped in your lap such treasures as your telephone, your automobile, your electric lights, your finer food and clothes! All are vital to your daily existence.

To live a more abundant life, to learn what scientific influences are going to help or hamper your business or your personal progress, to satisfy your intellectual curiosity, read each month's issue of

SCIENTIFIC AMERICAN

Read its careful interpretations of scientific achievements, written by leaders in all fields of science, industry, and engineering.

In The September Issue

CALLING ON THE WIDOW—An intimate word-picture of our most dangerous spider, the Black Widow, whose poison, drop for drop, is more deadly than that of any snake.

ARCHEOLOGY FROM THE AIR—The archeologist standing on the earth's surface is "too close to the trees to see the woods" but air photography reveals a new crop of discoveries.

WHO'S A GOOD DRIVER?—Probably each driver thinks he is, but scientific tests of driving skill show some amazing results.

UP TO DATE ON COSMIC RAYS—Efforts to piece together the biggest present puzzle of physical science go on. Part of the picture emerges but much remains a deep mystery.

LIQUID-PROPELLANT ROCKET DEVELOPMENT—An article by Dr. Goddard, the foremost researcher in this new field, outlining the present status of this scientific work.

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ACCEPTED FOODS

This department is a useful guide in the selection of foods of quality, advertised with truthful claims. All products in this section as well as any others advertised elsewhere in HYGEIA stand accepted by the Committee on Foods of the American Medical Association, and are entitled to bear its "Seal of Acceptance." The foods listed here are but a portion of those accepted by the Committee. If you desire information regarding any other food product, you are invited to write to HYGEIA.

Dr. Phillips

CITRUS FRUIT JUICES

Recommended for Children

as a Source of Vitamins A, B and C

Dr. Phillips Orange and Grapefruit Juices and Grapefruit Hearts are uniformly rich in vitamin C and always full of flavor. **Tree-ripened**, they are canned fresh from the grove under the most modern scientific and sanitary conditions. Easy to serve at any time, anywhere. Get several cans today.

DR. P. PHILLIPS CO., Orlando, Florida

WHITE BREAD

An interesting set of questions and answers in booklet form. A copy may be obtained free by request to the

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Golden State EVAPORATED MILK

California's own brand

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DURKEE'S PURELY AMERICAN VEGETABLE MARGARINE

Made entirely from American produced ingredients. Delicious. Wholesome. For cooking, frying, baking and table use.

Ask Your Grocer for Durkee's Margarine.

Durkee Famous Foods, Inc. Chicago, Ill. Norwalk, Ohio

ASSURED HIGH QUALITY

C-H-B CALIFORNIA HOME BRAND

Tomato Juice
Tomato Catsup
Chili Sauce

Drink Krim-Ko* for Calcium

A delicious beverage, rich in bone and tooth building calcium. Children drink Krim-Ko without coaxing. See page 861 for additional information on Krim-Ko.

* chocolate flavored, sweetened, partially defatted milk (added tapioca—salt).

KRIM-KO CO., 4830 S. Turner Ave., Chicago

Do You Know—

1. What "Undulant Fever" is? *See page 780.*
2. That the round kind of goldfish bowl can be a real fire hazard? *See page 788.*
3. That venomous snake secretions have, in the main, three poisonous elements in them? *See page 784.*
4. What the increase in deaths due to heart disease has been in the last twenty-five years? *See page 816.*
5. How long an untreated cancer patient is likely to live? *See page 822.*
6. What the mathematically correct schedule of living is for a long healthy life? *See page 802.*
7. When the vaccination procedure was discovered? *See page 796.*
8. What diseases are now on their way to oblivion that were once rampant? *See page 813.*
9. That college students are found by comparative statistics to be physically superior to noncollege men and women? *See page 798.*
10. That from the standpoint of economies it will pay any man to employ a health director to help him balance his physical budget? *See page 819.*
11. What conditions must be favorable to the contraction of typhoid? *See page 825.*
12. Who conquered yellow fever in the tropics? *See page 805.*
13. Why there is an urgent need for a new Food and Drug Act? *See page 832.*
14. What the benefits and disadvantages of home study for children are? *See page 808.*

OLD ANTIQUE

Pale Dry

Ginger Ale ◆ ◆ ◆

Clear and bubbling, zestful and refreshing. Old Antique is a ginger ale that will please you. When you order ginger ale, ask for Old Antique. Keep several bottles of it in your refrigerator — to be ready when you want it. For you'll want more, once you taste Old Antique.

Bottled by
The Better Bottler in Your City

Hurff's Tomato Juice has been accepted by the Committee on Foods of the American Medical Association. Hurff's Tomato Juice is made from carefully selected vine ripened New Jersey tomatoes, and is a dependable source of vitamins A, B and C.

EDGAR F. HURFF CO.
Swedesboro, N. J.

HURFF BRAND

TOMATO JUICE

Prince VETA-RONI SOUP DOTS

The High Protein Food

What's in a Can of Canned Food?

Modern knowledge is shattering many false ideas about canned foods. Be sure to read the highly informative series of ads in HYGEIA on values of canned foods. See page 864.

AMERICAN CAN COMPANY, New York City

Saves Work for Mothers

Why go to the trouble of cooking and straining vegetables for baby when, for only a few cents a day, you can feed Gerber's Strained Vegetables? 9 foods to choose from. See page 860.

GERBER PRODUCTS CO.
Fremont, Mich.

DO YOU LIKE GOOD CREAM CHEESE?

HAVE YOUR DEALER SHOW YOU THE NAME

Breakstone's

WHEN HE CUTS YOUR ORDER

Mention HYGEIA when writing to Advertisers

CAN PARENTS HELP TO ALLAY CHILDISH FEARS?

"How can Bob expect me to let him ride a bicycle? Only the other day his cousin broke his leg on one!"

"I just couldn't send my children to camp—I'd die a thousand deaths all summer!"

The echoes of anxious parents pass on to their children. There are risks in living. From birth, and even before, our children are faced with real hazards which may threaten their physical well being. In the beginning the matter of safety is wholly an adult responsibility; and it is one that can be met better by an attitude of unemotional caution than by one of continuous anxiety, says *Child Study* magazine.

With growth in understanding and maturity, children must learn gradually to assume more and more responsibility for their own safety. They must also gradually learn to differentiate between real and imaginary fears. The problem of how to help children learn to face a specific danger or fear is as old as life itself, and perhaps as insoluble.

Courage, the physical stamina to withstand the grosser onslaughts of life, may help us all to behave effectively when external forces, such as lightning, animals, fire and disease threaten. But we seek another quality, spiritual fortitude, perhaps, with which to arm ourselves and our children against that other kind of dread which comes from such causes as being out of a job, foreclosure of a home, a serious operation or the death of a beloved one.

Is it our desire that our children should always "take it?" Certain demands may be unfair, unreasonable, unjust. They may fail to take into account the child's readiness for the particular experience, his real feelings, the possibility of harm to his personality or of grave risk to his basic security.

Many of us have rediscovered for ourselves, especially during these recent years of upheaval, that the human spirit does rise to meet an emergency. Sometimes it calls forth undreamed of inner poise.

It is evident that in any attempt to help a child understand and master his fears, we must first come to terms with our own. We should desire not to give him false security, but rather to help him face life as it is.

Error is the force that welds men together; truth is communicated to men only by deeds of truth.

—Tolstoi.

Heinz uses only fully ripened apricots and just enough mild-flavored apples to overcome the tartness of a straight apricot product.

No bargains for

YOUR BABY

IT'S smart to shop for bargains in clothing or furniture—but don't look for "bargains" in baby's food! Give him the *best!* Now you can do this without any extra expense, for in most stores Heinz Strained Foods *cost no more* than other brands!

You know that the name Heinz and the famous "57" seal stand for food *quality.* When you buy Heinz Strained Foods for your baby, you are *doubly* protected. For in addition to the Heinz seal, each spotless, enamel-lined tin bears the Seal of Acceptance of the American Medical Association's Committee on Foods! And most children definitely prefer the "garden-fresh" flavor of Heinz Strained Foods!

See your grocer and get a generous assortment of these high-quality, officially accepted foods for your baby today!

ACCEPTED AMERICAN MEDICAL ASSN.

HEINZ 57

STRAINED FOODS

10 KINDS—1. Strained Vegetable Soup. 2. Peas. 3. Green Beans. 4. Spinach. 5. Carrots. 6. Beets. 7. Prunes. 8. Cereal. 9. Tomatoes. 10. Apricots and Apple Sauce.

RECREATION GROWS IN POPULARITY

The American appetite for active recreation is sharpening, according to a ten year review of public leisure activities published in the Year Book of the National Recreation Association. Reports from 2,204 cities are included.

Bathing beaches, public golf courses, ice skating arenas and swimming pools doubled in number from 1925 to 1935. Schools and other buildings used in part as recreation centers tripled, and the number of buildings used entirely for recreation quadrupled. Tennis courts and baseball diamonds increased one and a half times. Children's playgrounds and wading pools also were doubled. New recreation areas opened last year for the first time totaled 1,790.

The number of employed men and women in charge of these and other facilities increased during the decade from 17,187 to 43,976.

Swimming leads in the cities canvassed as the most popular public recreation sport with 836,000 individual professed devotees. The ice skaters are second, with 732,000 participants. Facilities provided by municipal and state authorities, and the vogue of ski and snow trains have also pushed forward tobogganing and skiing. Baseball, suffering from the competition of many other sports, recorded 294,000 players; while softball, which is much less expensive in equipment and space requirements, enrolled 396,000. There were nearly as many basketball players as there were in baseball.

With blacksmith shops existing only as rarities, horseshoes are now manufactured in large quantities for the 377,000 pitchers. Public demand produced 321 new tennis courts last year, and there were one-third of a million players. Badminton and table tennis also showed a good gain in public favor.

Golf reported a seasonal participation of six and a half million players. Archery, bowling on the green and shuffleboard are among the relatively new activities that are growing in popularity.

Picnicking led the list of informal outdoor activities, 347,000 taking part. Hikers numbered 76,000.

In the arts field, handcraft claimed 438,000 children and 73,000 adults; pageantry, 70,000; plays, 46,000. There were 147,000 enrolled in orchestras and 194,000 singers. Folk dancing was enjoyed by 108,000 and social dancing by 186,000.

HOME GROWN

More Vitamins
More Mineral Salts

FOR YOU *and* YOUR BABY

However painstakingly you may select market vegetables—if they are not cooked promptly after *sun*-ripening, *time* will steal some of those special food elements which your baby requires to grow normally!

And however painstakingly you cook and sieve them, you can scarcely exclude air, and vacuumize natural moisture—as you must to keep those special food values!

Gerber's are *Home Grown*, within one hour's trucking from our kitchens, in selected soils, from pedigreed seeds, under our control. Then cooked in systems *closed* against marauding air that would lessen precious vitamins—and guarded from such moisture loss as would rob them of mineral values. And because we get them *fresh*, we can pack them *un*seasoned; *you* simply follow doctor's orders if he advises you to add salt or sugar.

Gerber's

Shaker-Cooked Strained Foods

STRAINED TOMATOES, GREEN BEANS, BEETS, CARROTS, PEAS, SPINACH, VEGETABLE SOUP. ALSO, STRAINED PRUNES AND CEREAL.

YOU ARE INVITED *to visit us and inspect our plant when vacationing or travelling in Michigan.*

To Please Your Baby—
Send for This Doll!

Only 3 Gerber labels and 10c. Doll safe, sanitary; stuffed sateen. State whether you want blue for boy or pink for girl.

GERBER PRODUCTS COMPANY
FREMONT, MICHIGAN
(In Canada: *Grown and Packed by* Fine Foods of Canada, Ltd., Tecumseh, Ontario.)

8 inch doll 129

NAME.....
ADDRESS.....
CITY.....STATE.....
AGE OF BABY.....BOY.....GIRL.....

"Mealtime Psychology"—a booklet on infant feeding also free on request. "Baby Book" on general infant care, 10c additional.

UNDULANT FEVER

(Continued from page 806)

dairymen, and packing-house employees, those whose work brought them into close contact with cattle and swine. Laboratory workers have been its frequent victims. Indeed, more than one investigator of long experience has stated that every research worker who handles the organism becomes infected sooner or later. This was the experience in the National Institute of Health at Washington, where six cases occurred (100 per cent), and it was likewise the experience in the laboratory maintained in France by the Rockefeller Foundation, where there were eleven cases (100 per cent). It remains a mystery why and how the laboratory infections occur; but the most extreme precautions seem to be of no avail.

Aside from these instances of infection as an occupational hazard, it has now been demonstrated conclusively that most of the cases in human beings come from drinking raw milk from infected herds. Moreover, government surveys of dairy herds in different sections of the country have shown that the uninfected herd is the rare exception. To mention only a few examples, 90 per cent of the herds of Connecticut and 86 per cent of those in Pennsylvania and in southern Ohio are said to be infected. In tests of 15,000 cattle in Missouri, 30 per cent gave positive reactions. In Pennsylvania it is said that 65 per cent of the cattle sold for butchering are sent to the slaughter pen because of contagious abortion.

It would be strange indeed, therefore, if the disease were not widespread among human beings, even though the number of recognized cases even now is comparatively small.

The existence of this disease, the source of infection and the method of transmission, namely, the drinking of raw, infected milk, point to the importance of laws providing for the universal pasteurization of milk. That this procedure is likely to be effective was early recognized by the Mexican goat-herders in the southwestern United States, who believed that the disease came from drinking raw goat's milk and that it could be avoided by boiling the milk. It is also related that in the early part of this century a herd of goats was being brought to New York by boat. Most of the sailors drank milk from these animals, and most of them came down with the disease; but two German engineers who boiled the milk escaped.

More recent work indicates conclusively that pasteurization at properly controlled temperatures will prevent the transmission of the disease. A few years ago there occurred a small epidemic of a strange kind of fever at a boys' school in New England. Its nature remained a mystery for several weeks, until the physician in charge investigated the possibility of undulant fever. In spite of the fact that the best sanitary conditions obtained in the school dairy and that no new animals had been introduced into the herd for several years previously, the source of the infection was traced to this herd. On the basis of these observations the school authorities purchased the necessary equipment for pasteurization. Since that time there have been no further cases.

We demand physically clean milk for esthetic if for no other reasons; but one cannot look at milk and tell whether or not it is bacteriologically safe. It is a matter of common knowledge that epidemics of many different diseases have been traced to this source. Among these have been epidemics of typhoid and various other intestinal infections and diarrheas, epidemics of sore throat, of scarlet fever and diphtheria. Every layman knows something of the problems that were involved in ridding our herds of tuberculosis. It is somewhat amazing to the scientist that in the face of these facts there should be, even today, an unfounded prejudice in the minds of many against the pasteurization of milk.

In 1893 the Public Health Service laid down certain standards for the bacteriologic purity of milk, and these, together with the conditions on the farms where it was produced, constituted the criteria for calling a milk certified. Fearing that some unscrupulous dairymen might depend on pasteurization as a substitute for cleanliness, it was decreed by the Certified Milk Producers' Association that milk bearing this grading should not be pasteurized. As further experience has accumulated, however, medical men and health authorities have felt that pasteurization of this clean milk would add the final factor of safety. For this reason, in June 1935 the American Association of Medical Milk Commissioners at their annual meeting in Atlantic City voted unanimously to permit the pasteurization of certified milk.

It will thus be seen that so far as health authorities are concerned, the desirability of pasteurizing all milk is an accepted opinion. Likewise, most of the larger dairies are

in favor of this procedure. Raw milk continues to be sold only because the public demands it, basing their choice on certain prejudiced ideas of taste. These ideas should not be allowed to stand in the way of safety from undulant fever and other infections spread by milk; and in all probability the day will soon come when all milk and dairy products will be subjected to this beneficent procedure.

Meanwhile, governmental agencies are at work to assist the farmers in ridding their herds of infected animals. Next to tuberculosis, contagious abortion is the most serious disease with which the animal industry has to deal. In the United States it exists everywhere, in range cattle as well as in dairy cattle. It causes a diminished milk supply because the cows are dry for long periods of time; it results in loss of calves; it produces sterility, and it injures the milk glands. The economic loss resulting from its ravages has been estimated at $80,000,000 annually. It is easy to see, therefore, why those in the animal industry are willing to support the efforts of the government to eliminate the infection. But this procedure is slow, and meanwhile our best protection lies in pasteurization. By the two methods of attack the time should shortly come when undulant fever, like typhoid, will have been relegated largely to the pages of medical history.

X-RAYS SHOW HIDDEN FLAWS IN FRUITS AND VEGETABLES

Fruits and vegetables may now be inspected before marketing with the aid of a portable x-ray machine outfit which was developed for the purpose at the University of Minnesota.

Shadow pictures clearly show whether an apple is rotten at the core, or a potato hollow at the center, when it is placed in the path of the rays and examined with a viewing screen held in the hand.

Since samples need not be cut open for examination, no waste is involved. Scientific investigation of the causes of defects in fruits and vegetables will also be aided by the device, as it may be applied without removing them from the tree or vine on which they grow.

—*Popular Science Monthly.*

Remember that the most important thing is not your surroundings but the intelligence with which you use those surroundings.—*French.*

MILK REBELS SURRENDER!

● Here is a happy and successful way to win little milk rebels to the regular drinking of milk. Just serve them Krim-Ko chocolate flavored drink, with meals or between meals. Krim-Ko is as tempting as a chocolate soda. It is pasteurized—delivered fresh from your local dairy. Appeals to milk fussers instantly. Krim-Ko is equal to milk in food energy value. Rich in teeth and bone-building calcium. Helps build and maintain normal weight. Accepted by the Council on Foods of the American Medical Association. Economical, too! Serve Krim-Ko to your children for a week. See if it doesn't improve their appetite for milk as well.

Free Diet Information

Write for full details as to how Krim-Ko can be used for cases of milk refusing, milk "fussing," over-eating of sweets and in-between-meal feeding. Krim-Ko Company, 4830 S. Turner Ave., Chicago, Ill.

● *Krim-Ko is chocolate flavored, pasteurized, partially de-fatted milk (added tapioca, salt).*

KRIM-KO

REG U.S. PAT OFF

CHOCOLATE FLAVORED DRINK

Try Heinz Double-Sure Strained Foods for Baby

You know Heinz quality in foods. You can have this same high standard in strained foods for baby. Insist on Heinz. Send for valuable baby diet book featured on page 859.

H. J. HEINZ CO., Pittsburgh, Pa.

LOUDON Brand
PURE
TOMATO JUICE

Delicious—Refreshing—Appetizing—Zestful
Brimming with Sunshine and Health

The Loudon Packing Company - - Terre Haute, Indiana

CLOVERDALE
Pure Mountain Water Sparkling

Wholesome and invigorating—comes from the lofty mountains of Pennsylvania. Used in making Cloverdale Sarsaparilla and Cloverdale Ginger Ale—both Pale Dry and Amber.

CLOVERDALE SPRING COMPANY
Plant: Newville, Pa. Office: Baltimore, Md.

Vitamin Certified, Non-Separating, Undiluted Pure Tomato Juice

●

THE SUN-RAYED COMPANY
FRANKFORT, INDIANA

EHMANN OLIVE OIL

is guaranteed to be a pure, virgin Olive Oil. It is pressed from carefully selected sound Ripe Olives under the most modern and sanitary conditions. Ehmann Olive Oil is recommended for both medicinal and table use because of its lack of after-taste and its perfect assimilation.

EHMANN
Olive Company
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Church's Pure Natural Grape Juice ●

made from properly ripened grapes. Contains no added sugar, water or other substance whatsoever.

Free from the excess acid of unripened fruit.

Church Grape Juice Company, Kennewick, Wash.

● There's never any coaxing or forcing with these strained foods. Baby takes them eagerly because they taste so good. Each of the nine tempting varieties is a choice food, properly prepared—rich in natural flavor. See page 863.

STOKELY'S

THE STRAINED FOODS BABY REALLY LIKES

Dated for Freshness.

SCHOOL AND HEALTH

(Continued from page 844)

First, we are all teachers. Some with a keen enthusiasm for one subject, some for others, but all working for the betterment of the boys and girls.

Second, when we join forces to promote health education, that comes first, and each one of us must thoughtfully examine our particular subject to discover just how it can help toward this common goal, while preserving and developing its own values.

Third, what are art values? When I was a youngster of 4 or 5 I was taken to see a robin's nest and shown the beauty of the blue-green eggs. I was taught to look for the different colors in the sunset, to see the white of cloud against the blue of sky, to love the color of pebbles under the clear and moving water of a chatty brook. I was shown fine bits of craftsmanship, skilfully executed toys. My grandmother's work box held a treasured needle book covered with a beautiful bit of old brocade. She kept wrapped in soft paper her cherished cashmere shawl. We've all had similar experiences of seeing and feeling loveliness. They are art values that have been health giving through the years. Rout depression by a walk. That's exercise, yes, but a walk in which eyes look for beauty. Suppose the physical self is not able to take that walk, the memory or imagination may. We who are physically fit can carry to others the color of the robin's egg, the beauty of the pebble, the product of skilled hands. We can alleviate physical discomfort through seeing, doing or creating, and so promote health and true art values.

There is an old tale of Corot, the artist, which tells of one who watched him as he painted. The observer said, "I don't see those trees you have in your foreground." "Ah!" said the artist, "you are looking at the wrong foreground; mine is always a long way off."

Sometimes, in teaching, the immediate foreground hides the one our completed picture needs. "Physical education has no methods, no principles, no objectives, but those in general education." The same is true of Art Education, but our foreground is too often made up of a background of inherited objectives, methods and devices with little thought for permanent art values.

While we must think of the immediate foreground when we have boys and girls waiting for us to lead them, we can at least glimpse the one that is "a long way off."

The activities commonly used to make art a part of the health teaching are:

1. Cutting out printed pictures, pasting them in scrap books or mounting for exhibition.
2. Patterns representing the factors that contribute to health, such as milk bottles, toothbrushes, vegetables, fruits, traced, cut and mounted.
3. Freehand cuttings of such factors.
4. Posters.
5. Original drawings of activities that lead to health.

Broadly speaking the health value of such activities lies in the emphasis of the health ideas, the art value in color, hue, shape and enjoyment. Health says we must have knowledge and right habits and give expression to both. Art agrees, but such expression must be as fine as possible.

When a child is given a picture that emphasizes a health idea, what does he have that is worth while? From the standpoint of health he has an increased emphasis on some particular habit or factor.

What does he have from the art side? Some slight increase in keener seeing. But a picture may show the health fact and still be crude in color, poor in drawing. No teacher of English would permit a crudely worded or misspelled slogan even though it gave the health fact she wished emphasized. When the picture is selected by the teacher she receives the training the child needs and he remains dependent. Here is one art opportunity. Make an appreciation lesson of this. Help the children to choose from many pictures those which tell the desired facts in the loveliest colors, the truest representations and the most skilful renderings.

Many teachers still use patterns, but no teacher will who works for permanent values in either health or art. Patterns belong in that discarded traditional foreground which hide the real one. Dependence on others is not a true health value. Our work is to help children to use their own eyes and record their own seeing. Skilfully tracing another's path and one which is often faulty has no art value.

The poster has been used more than any other vehicle because we are trying to sell the idea of health education. A poster must make the

Doing
ONE THING
Well

FOR 90 years we have specialized in the production of pure Sodium Bicarbonate.

Our brands, Arm & Hammer and Cow Brand Baking Soda, are familiar old standbys in millions of American households.

But not everyone knows that our *Baking Soda* is pure *Bicarbonate of Soda* of U.S.P. standard, and recognized as such by the Council on Pharmacy and Chemistry of the American Medical Association.

Whenever the need for Sodium Bicarbonate is indicated, and there are many daily uses for this essential remedy in the home, Arm & Hammer or Cow Brand can be used with confidence. So it is helpful to keep at least two packages on hand always, one for the kitchen, another for the medicine cabinet.

Their cost is but a few cents a package—in handy, sealed containers.

Business Established In 1846

Church & Dwight Co., Inc.
10 Cedar St., New York, N. Y.

audience wish to participate or to desire that which it portrays. Does a representation of a toothbrush cut out of paper make children wish to brush their teeth? Does a milk bottle necessarily tempt them to drink? How does the trained commercial artist tempt us? By the best coloring that he can use or by a stimulating representation.

Suppose a child selects his own picture, finds for himself how some one else with more ability has told the story, or his imagination sees in it something never intended by the artist. Has this value from the health side? Just the same as in the first case—that of emphasis through varied repetition. Has it art value? Yes, *if* he is commended for doing his own seeing or thinking.

Suppose he makes the picture into a poster and letters an explanatory slogan. How may it rate? One point for health on the same old basis of emphasis of idea, and one point each for imagination and skill in art.

He makes an original sketch. Here we have what should be the best exercise for health and for art, but it is the one least used. Why? Principally because we teachers have not been satisfied with the unskilled products of the children. Our standards have been wrong, our judgments have been based upon technical execution rather than upon the spirit or lasting values we wish to teach through art. Health education has succeeded because emphasis has been placed upon a universally desired end and upon definite ways of bringing this to pass. Art can add much to the joy, the beauty and the effectiveness of such definite means. Art has something to contribute that is a necessary health giving ingredient in those staves of life that aid the mind to conquer physical ills.

When the grade teacher and the teacher of art plan with a knowledge of how all subjects may work together for the "far off foreground" then we will have art for health and health through art.

To Contributors:—*The editor of the School and Health Department will be pleased to receive articles dealing with the actual solution of concrete and practical health education problems in the school. Contributions on general theory are not solicited. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

Every mother knows the protection a good fever thermometer can give her baby's health. No mother wants to be without one. Yet they're expensive and often broken. Here's *your* chance to get a regular $1.25 certified thermometer made by Faichney, Watertown, N.Y., on a special limited offer. Simply send 12 *labels from* STOKELY'S STRAINED FOODS *and 25c to Stokely Brothers & Company, 2351 South East Street, Indianapolis, Indiana.* Your thermometer will be sent to you immediately—postage prepaid.

REMEMBER MOTHER! There's no fussing or fretting when Stokely's are on baby's menu. Baby takes *these* strained foods eagerly; they taste so good. Nine tempting varieties—each prepared to retain natural flavor and food value. Smoothly strained to be readily digestible. Packed in golden enamel lined cans, ready to heat and serve. ASK YOUR DOCTOR.

BREAD FOR FOOD ENERGY

Doesn't your child like cereals? Then you haven't given him WHEATIES yet!

Give your children plenty of good, wholesome baker's bread. It satisfies their lusty appetites and supplies the food energy growing youngsters need. See third cover for facts about bread.

PLEASE SEE PAGE 769

CONCISE—AUTHORITATIVE—MATTER-OF-FACT —COVERS EVERYTHING

"A Child is to be Born"

Reprinted for expectant mothers from the series in "Hygeia"

Symptoms—Exercise Diet—Clothing 15c American Medical Assn. 535 N. Dearborn St., Chicago

LIFE EXPECTANCY IN NEW ZEALAND IS OVER FIVE YEARS LONGER THAN HERE

A newborn child in New Zealand can look forward, on an average, to five and a half more years of life than a child just born in the United States, according to the Statistical Bulletin of the Metropolitan Life Insurance Company just issued in June, 1936.

The causes of death that make up this large differential are numerous. The greatest saving in the United States, in point of numbers, would occur in deaths from influenza and pneumonia. Next in order would come chronic nephritis, cerebral hemorrhage and accidents. Sustaining these major causes are heart disease, diarrhea and enteritis, appendicitis, diabetes and tuberculosis.

In a few instances our mortality rates, though less favorable at earlier ages than those of New Zealand, are more favorable at advanced ages. This is the case for heart disease, for example. From about age 75 up, our death rate from this cause is less than the New Zealand rate, though at earlier ages our rate is very materially higher. This might be expressed by saying that the persons who die of heart disease do so as a general rule at an earlier age here than in New Zealand, with the result that at later ages there are fewer of this type of persons left over to die.

It was also pointed out that these comparative percentage figures would probably continue to be at high variance because of the nation's decline in the birth rate. This means that in a few years the composition of our population will consist of a greater proportion of older people with a consequent higher mortality rate. This is also assuming no increase in the birth rate.

THE MICROBES

Two microbes sat on a pantry shelf
And watched, with expressions pained,
The milkmaid's stunts;
And both said at once
"Our relations are going to be strained."

—*Indiana Division of Public Health.*

There is nothing in the world so cock-sure as a 16 year old boy except a 15 year old girl; and a man or woman in the seventies who welcomes opportunity to acquire knowledge is a jewel beyond price.

ADVENTURE . . .

AND what a *big* adventure . . . that first exciting encounter with the ocean! It takes confidence and courage. *Confidence* in daddy . . . and *courage*, nurtured in a healthy little body by a wise mother.

In seeking wholesome, body-building nutrients, more and more mothers are learning how canned foods can help. First, those canned strained *infant* foods, recommended by pediatricians. And then, canned foods in all their abundant variety. Because canned foods for infants as well as for adults have this important value in common: they are *sealed-cooked* — cooked in the can after sealing — a process that greatly conserves vitamins and minerals.

Vitamin C, the anti-scorbutic (scurvy preventing) vitamin, for example, is conserved in high degree. When you cook vegetables at home, the cooking is usually done in an open vessel, which means that vitamin C is liable to destruction by oxygen of the air. But, in the canning method, cooking is done after most of the air has been removed from the can.

This Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Committee on Foods of the American Medical Association.

Home Economics Department

AMERICAN CAN COMPANY

230 Park Avenue, New York City